

# Electrical Alterations (Contract No. 04-44122)

The as-built drawings, which are contained in these CDs, are scanned from drawings of the existing structure for the convenience of the contractor and as a means to convey to the contractor the available information regarding the existing structure. It is to be understood that no claim is being made as to the accuracy or completeness of the said information and that the State of California or its officers or agents shall not be responsible for the manner in which the contractor interprets and uses this information or for the accuracy, currency or completeness of these scanned as-built drawings. The contractor shall be responsible to obtain, at the contractor's expense, any additional information that the contractor deems necessary for completely and accurately assessing the existing conditions of the structure. The contractor shall not be entitled to any compensation for any claim arising from inaccuracy or insufficiency of these as-built drawings or in anyway related to these drawings.

[1. Project Plan and Elevation](#)

[2. General](#)

[3. Schematic-1](#)

[4. Schematic-2](#)

[5. Schematic-3](#)

[6. Schematic-4](#)

[7. Schematic-5](#)

[8. Schematic-6](#)

[9. Schematic-7](#)

[10. Substation 1 Alteration](#)

[11. Substation at Beale Street](#)

[12. Substation 2 Alteration](#)

[13. Substation at Pier W4-12 KV](#)

[14. Substation 3 Alteration](#)

[15. Substation Y.B.1-12 KV](#)

[16. Substation 4 Alteration](#)

[17. Substation E9-12 KV](#)

[18. Upper Deck Plan 48+00 - 106+75](#)

[19. Upper Deck Plan 106+75 - 192+25](#)

[20. Upper Deck Plan 192+25 - 281+50](#)

[21. Ground System Details 1](#)

[22. Ground System Details 2](#)

[23. Ground System Details 3](#)

[24. Ground System Details 4](#)

[25. Supervisory Control Modification - 1](#)

[26. Supervisory Control Modification - 2](#)

[27. Supervisory Control Modification - 3](#)

[28. Supervisory Control Modification - 4](#)

[29. Supervisory Control Modification - 5](#)

[30. Navigation Aid Reconnection - 1](#)

[31. Navigation Aid Reconnection - 2](#)

[32. Navigation Aid Reconnection - 3](#)

[33. Navigation Aid Reconnection - 4](#)

[34. Navigation Aid Reconnection - 5](#)

[35. Installation at Mole Substation - 1](#)

[36. Installation at Mole Substation - 2](#)

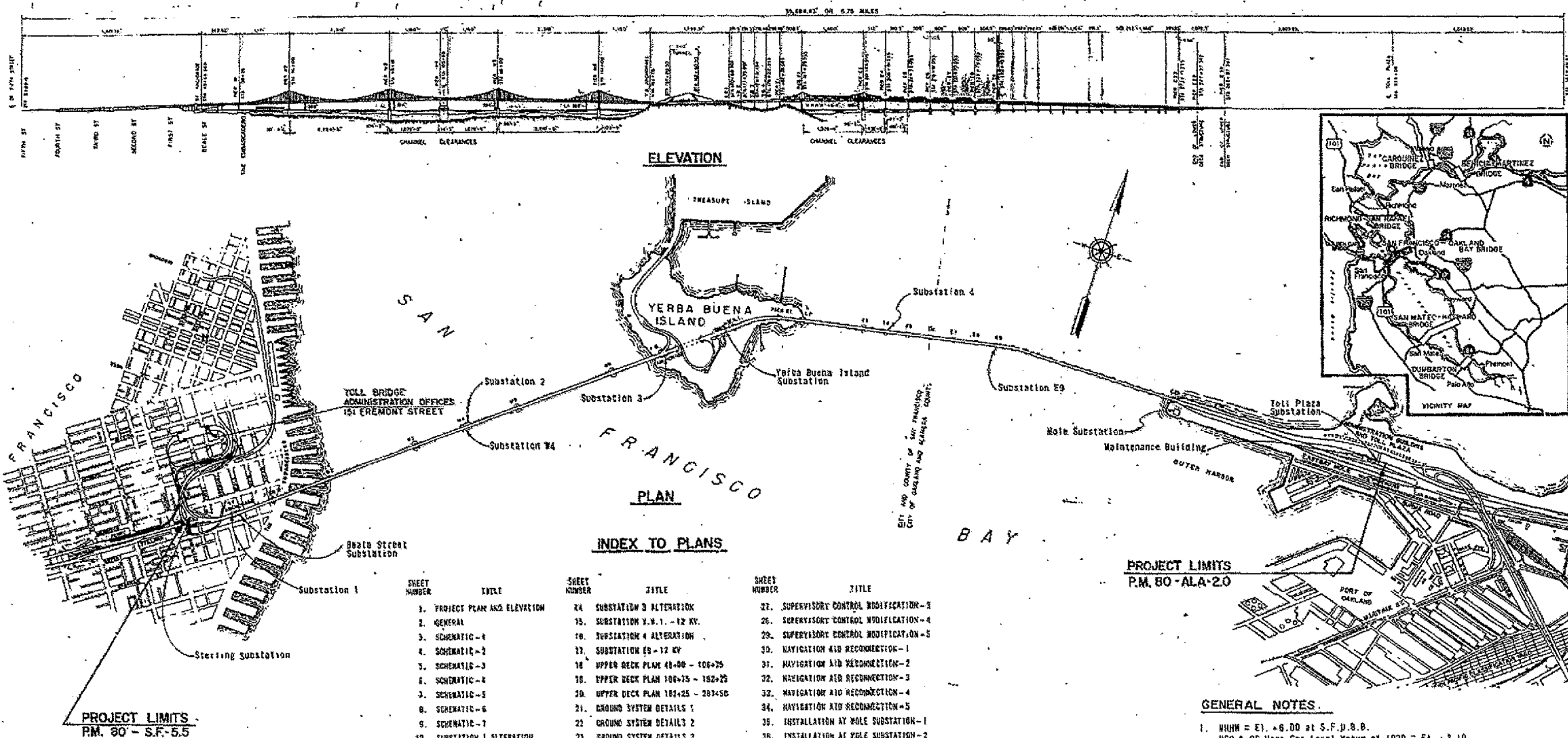
[37. Installation at Mole Substation - 3](#)

[38. Installation at Mole Substation - 4](#)

[39. Outdoor Enclosure Doors](#)

[40. Foghorn Reconnections](#)

[41. East Bay Foghorn Reconnections](#)



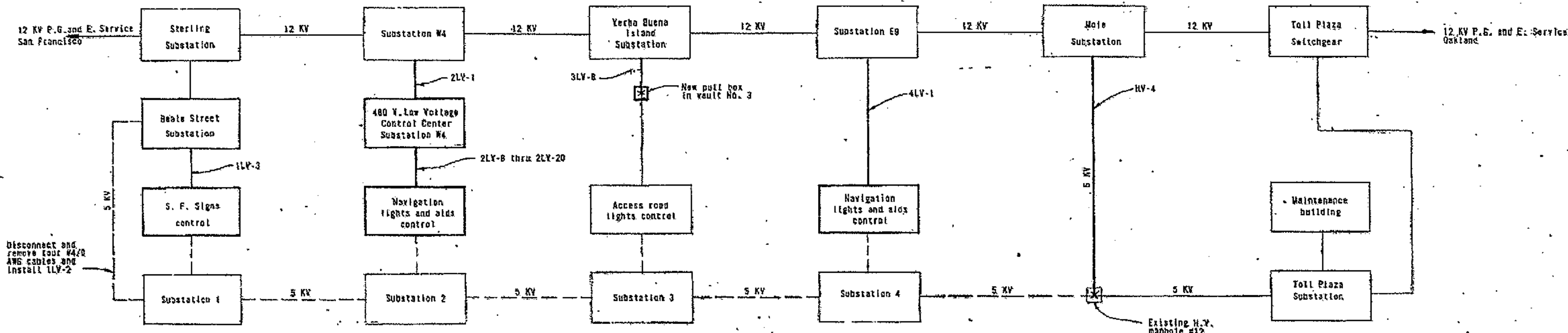
# INDEX TO PLANS

| SHEET NUMBER | TITLE                      | SHEET NUMBER | TITLE                    | SHEET NUMBER | TITLE                              |
|--------------|----------------------------|--------------|--------------------------|--------------|------------------------------------|
| 1.           | PROJECT PLAN AND ELEVATION | 24.          | SUBSTATION 3 ALTERATION  | 27.          | SUPERVISORY CONTROL MODIFICATION-3 |
| 2.           | GENERAL                    | 25.          | SUBSTATION 4 ALTERATION  | 28.          | SUPERVISORY CONTROL MODIFICATION-4 |
| 3.           | SCHEMATIC-1                | 26.          | SUBSTATION 5 ALTERATION  | 29.          | SUPERVISORY CONTROL MODIFICATION-5 |
| 4.           | SCHEMATIC-2                | 27.          | SUBSTATION 6 ALTERATION  | 30.          | NAVIGATION AID RECONNECTION-1      |
| 5.           | SCHEMATIC-3                | 28.          | SUBSTATION 7 ALTERATION  | 31.          | NAVIGATION AID RECONNECTION-2      |
| 6.           | SCHEMATIC-4                | 29.          | SUBSTATION 8 ALTERATION  | 32.          | NAVIGATION AID RECONNECTION-3      |
| 7.           | SCHEMATIC-5                | 30.          | SUBSTATION 9 ALTERATION  | 33.          | NAVIGATION AID RECONNECTION-4      |
| 8.           | SCHEMATIC-6                | 31.          | SUBSTATION 10 ALTERATION | 34.          | NAVIGATION AID RECONNECTION-5      |
| 9.           | SCHEMATIC-7                | 32.          | SUBSTATION 11 ALTERATION | 35.          | INSTALLATION AT MOLE SUBSTATION-1  |
| 10.          | SUBSTATION 1 ALTERATION    | 33.          | SUBSTATION 12 ALTERATION | 36.          | INSTALLATION AT MOLE SUBSTATION-2  |
| 11.          | SUBSTATION 2 ALTERATION    | 34.          | SUBSTATION 13 ALTERATION | 37.          | INSTALLATION AT MOLE SUBSTATION-3  |
| 12.          | SUBSTATION 3 ALTERATION    | 35.          | SUBSTATION 14 ALTERATION | 38.          | INSTALLATION AT MOLE SUBSTATION-4  |
| 13.          | SUBSTATION 4 ALTERATION    | 36.          | SUBSTATION 15 ALTERATION | 39.          | OUTDOOR ENCLOSURE DOORS            |

# GENERAL NOTES

1. MHHW = E1. +6.00 at S.F.D.B.B.  
USC & GS Mean Sea Level Datum of 1929 = E1. +3.10  
MLLW = E1. 0.00
2. Coordinate system is a local system. Its origin is located on the centerline of the San Francisco-Oakland Bay Bridge at S.F.D.B.B. station 273+20.071 P.O.T. The coordinate values assigned to the origin are N 5,000.00 and E 10,000.00. Bearings are on a true bearing system as used for the original construction of the San Francisco-Oakland Bay Bridge. Distances are ground level distances.

|  |                                   |                                    |                         |
|--|-----------------------------------|------------------------------------|-------------------------|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                                   |                                    |                         |
| DESIGNED BY<br><i>W. J. Rieker</i>   | CHECKED BY<br><i>W. J. Rieker</i> | APPROVED BY<br><i>W. J. Rieker</i> | DATE<br>OCTOBER 3, 1973 |
| PROJECT NO.<br>C-44122-1   |                                   | DRAWING NO.<br>C-44122-1           |                         |



POWER DISTRIBUTION BLOCK DIAGRAM

# LEGEND

- Existing cables and/or raceways
- New cables and/or raceways
- Disconnect cables and/or raceways
- Oil fuse cutout
- Disconnect switch
- Circuit breaker; numeral above line indicates trip amps., numeral below line indicates frame amps.
- Capacitor
- Fuse
- Conductor connections
- Rectifier (diode)
- Ground connection
- Overcurrent unit
- Contacts normally open
- Contacts normally closed
- Magnetic starter coil
- Conduit turn toward observer
- Conduit turn away from observer
- Phase or diameter
- Push button stop
- Push button start
- Selector switch
- Time delay contact
- Time delay on

- Transformer
- Constant current transformer
- Incandescent light; letter inside indicates color
- Incandescent light; numeral indicates loop wattage
- Junction box
- Auxiliary relay (identical for numeral 84 and up)
- Pier identification
- Terminal board
- Post apart terminal board
- Oil circuit breaker with disconnect switches
- Mating connector
- Duplex receptacle outlet
- Motorized high voltage power switch
- Air pressure switch
- Lubrication oil low level switch
- Switch
- Stress cone connection

- B1V,B1E Oil circuit breakers at Substation 1
- B2V,B2E Oil circuit breakers at Substation 2
- B3V,B3E Oil circuit breakers at Substation 3
- B4V,B4E Oil circuit breakers at Substation 4
- Comm. Communication
- Clt. br. Circuit breaker
- LI1 thru LI12 Isolating transformers
- M1 thru M15 Oil immersed magnetic switches
- D.C.B. Oil circuit breaker
- R1 thru R12 Constant current transformers
- S.C. Supervisory control
- Sel. Sw. Selector switch
- T.B. Terminal board
- T1,T2,T3,T4 Transformers for station lights
- T1A Transformer for 480 V. signs (inactive)
- T3A Transformer for Yerba Buena access road lighting
- TCB1,TCB2,TCB3 Transformers for oil circuit breaker control
- TCP1,TCP3 Transformers for air compressors
- Fuse
- KV Kilowatt
- G.R.S. Galvanized rigid steel

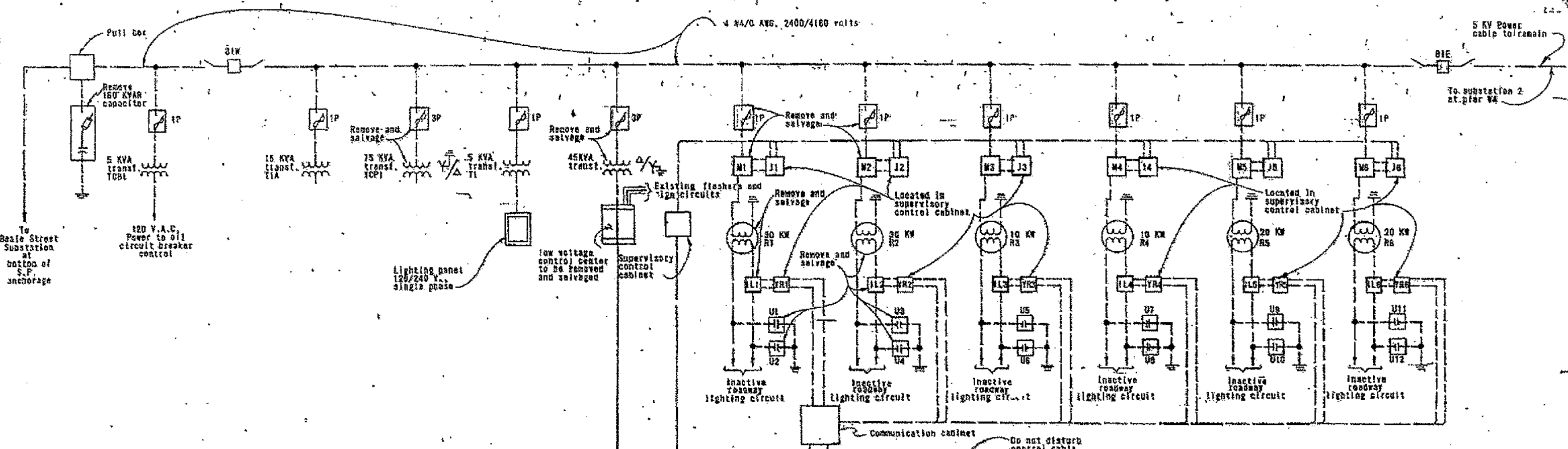
- TS1,TS2 Transformers for navigation aids
- TQ1,TQ2 Transformers for navigation lights
- TS1G1,TS1G2 Transformers formerly for lane signals
- U1 thru U20 Lightning arrestors
- YR1 thru YR6 Indicating relays
- L.V.C.C. Low voltage control center
- 1P,2P,3P One pole, two pole, three pole
- PEX Photo-electric auxiliary relay
- P.E. Photo-electric relay
- L.S. Indicating light negative power steady
- L.F.A. Indicating light negative power flashing with alarm
- CR1 thru CR5 Control relays
- Flex. LT Flexible liquidtight conduit

## NOTES

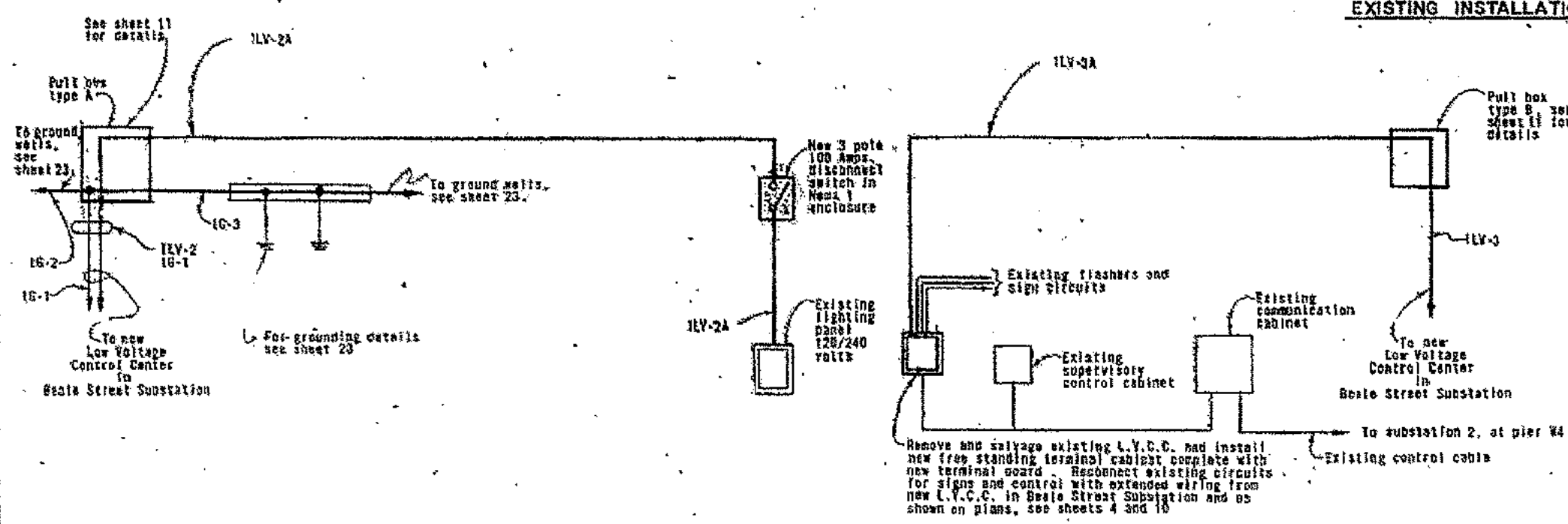
1. Heavy lines indicate new work.
2. Dashed lines indicate disconnect unless otherwise noted.
3. For equipment physical locations see sheets 10 thru 17.
4. For circuit schedules, see sheets 5, 7, 8, 11 and 37.



| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                           |                        |                 |
|--|---------------------------|------------------------|-----------------|
| DESIGN   | BY A. A. KRAMER           | CHECKED                | BY J. J. KRAMER |
| DRAWING  | BY J. J. KRAMER           | CHECKED                | BY J. J. KRAMER |
| IN CHARGE OF DESIGN  | Raymond Chan              |                        |                 |
| APPROVAL   | APPROVED DECEMBER 5, 1973 |                        |                 |
| RECOMMENDED  | APPROVED DECEMBER 5, 1973 |                        |                 |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                           | ELECTRICAL ALTERATIONS |                 |
| GENERAL  |                           | DRAWING NO. C-44122-2  |                 |
| SCALE  | NONE                      | SHEET NO.              | 2               |

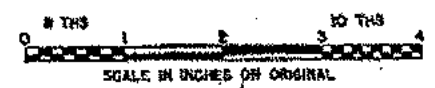


EXISTING INSTALLATION-SUBSTATION 1



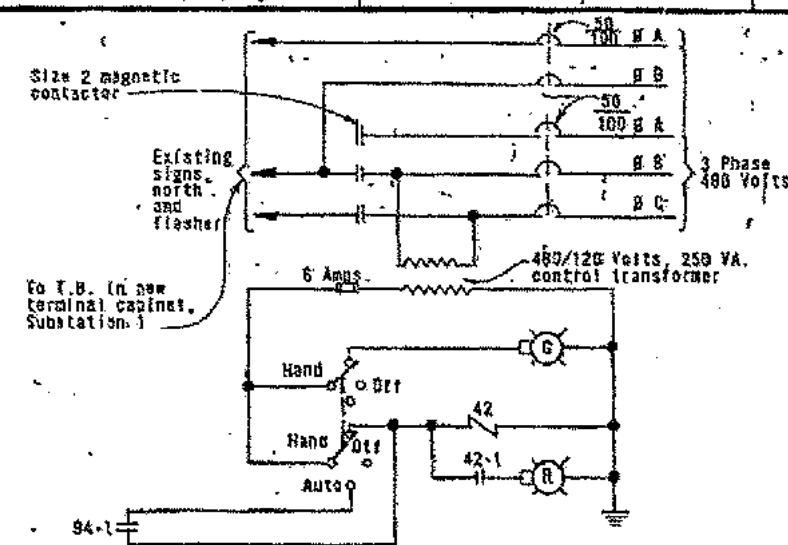
ALTERED INSTALLATION-SUBSTATION 1

- NOTES**
1. For LEGEND see sheet 2.
  2. For physical location, see sheet 10.
  3. Dashed lines indicate disconnect and removal; heavy lines indicate new work, unless otherwise noted.
  4. For circuit schedule see sheet 11.
  5. Disconnect, remove and dispose of all existing equipment unless it is otherwise indicated.

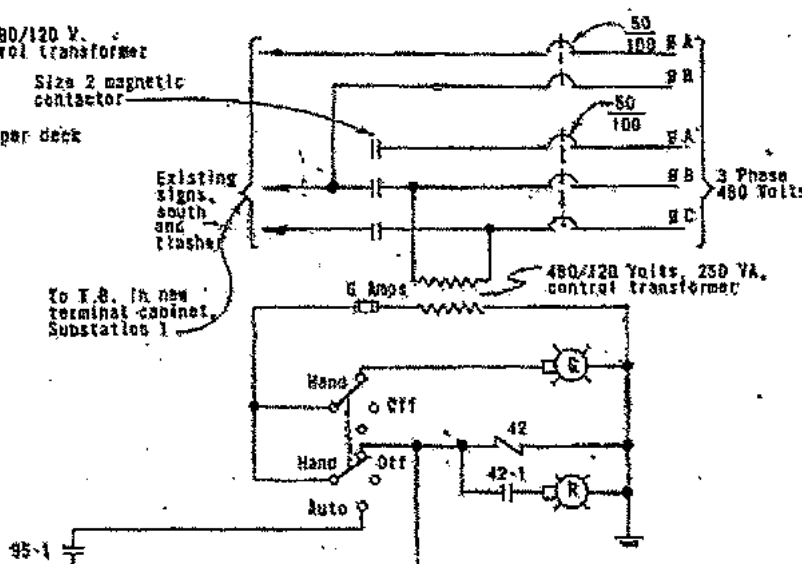


|  |                   |   |              |
|--|-------------------|---|--------------|
| STATE OF CALIFORNIA — HIGHWAYS AND TRANSPORTATION AGENCY — |                   | DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |              |
| DESIGN: W.A. ARMSTRONG                                     | CHK: [Signature]  | SAN FRANCISCO-OAKLAND BAY BRIDGE                          |              |
| DRAWN: [Signature]   | CHK: [Signature]  | ELECTRICAL ALTERATIONS                                    |              |
| IN CHARGE OF PROJECT: Raymond Chan                         |                   | APPROVED: DECEMBER 3, 1973                                |              |
| APPROVAL: [Signature]                                      |                   | SCHEMATIC - 1   |              |
| DATE: [Blank]  | DIVISION: [Blank] | SCALE: NONE   | SHEET NO. 31 |
| BY: [Blank]  |                   | DRAWING NO. C-44122-3                                     |              |

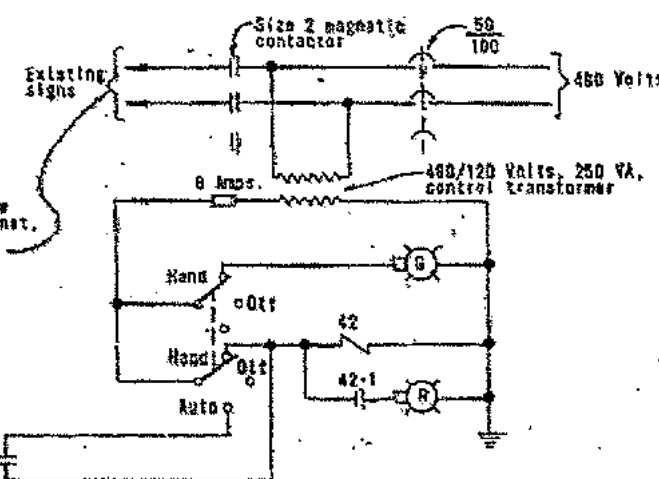




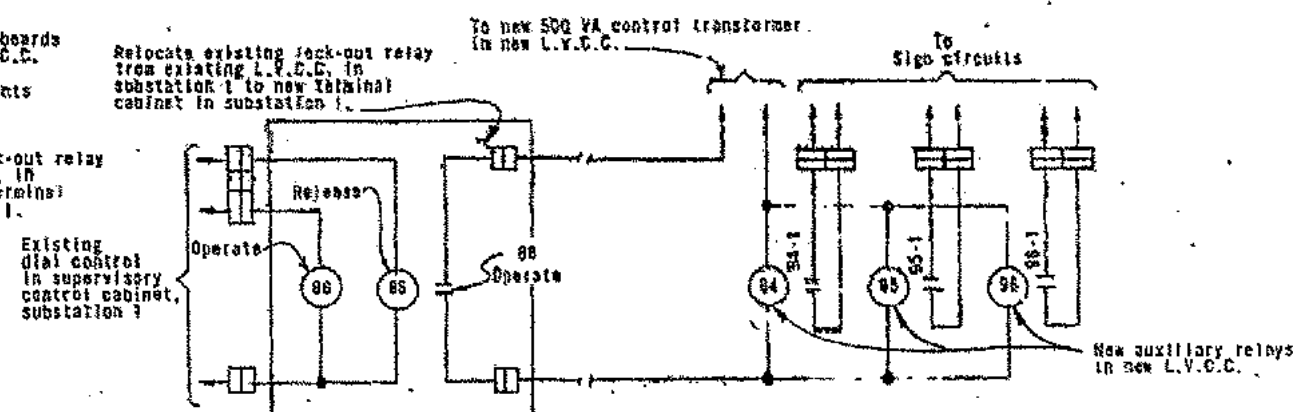
**POWER DISTRIBUTION-BEALE STREET SUBSTATION**  
(One line diagram)



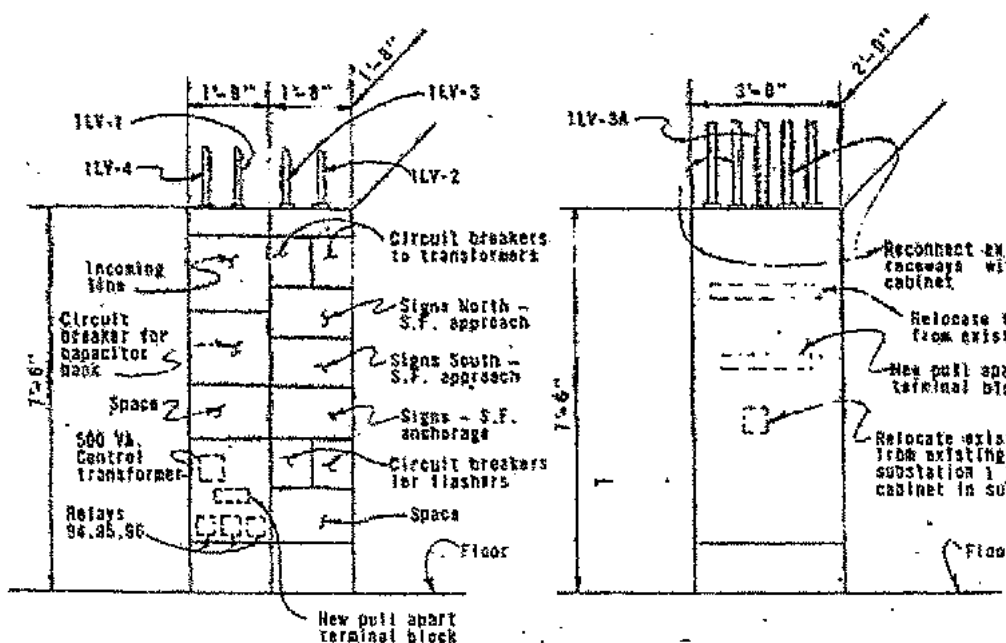
SIGNS - SAN FRANCISCO ANCHORAGE



SIGNS SOUTH - SAN FRANCISCO ANCHORAGE



### SIGNS CONTROL



NEW L.V. CONTROL CENTER

(Located in Bible St. Substation)  
Scale: None.

NEW TERMINAL CABINET

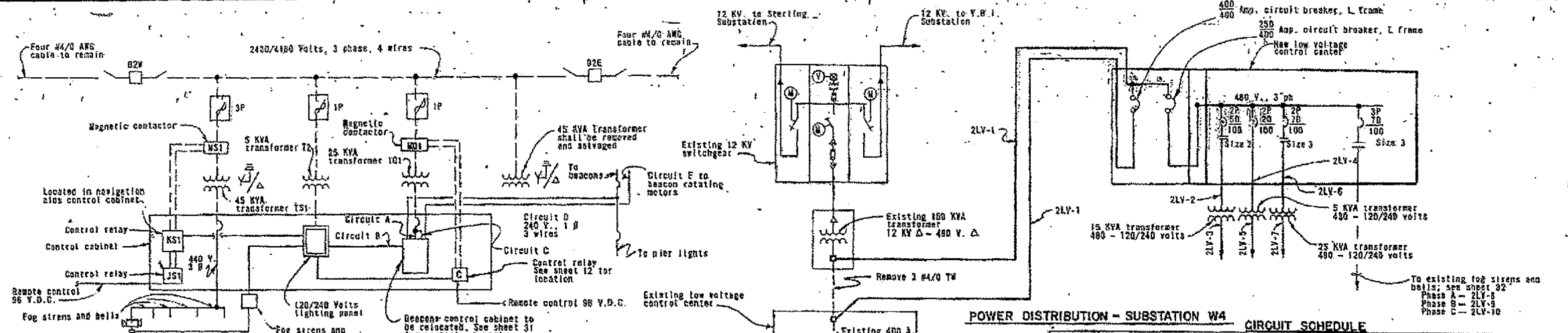
(Located in Substation 1)  
Scale: None

- ## NOTES

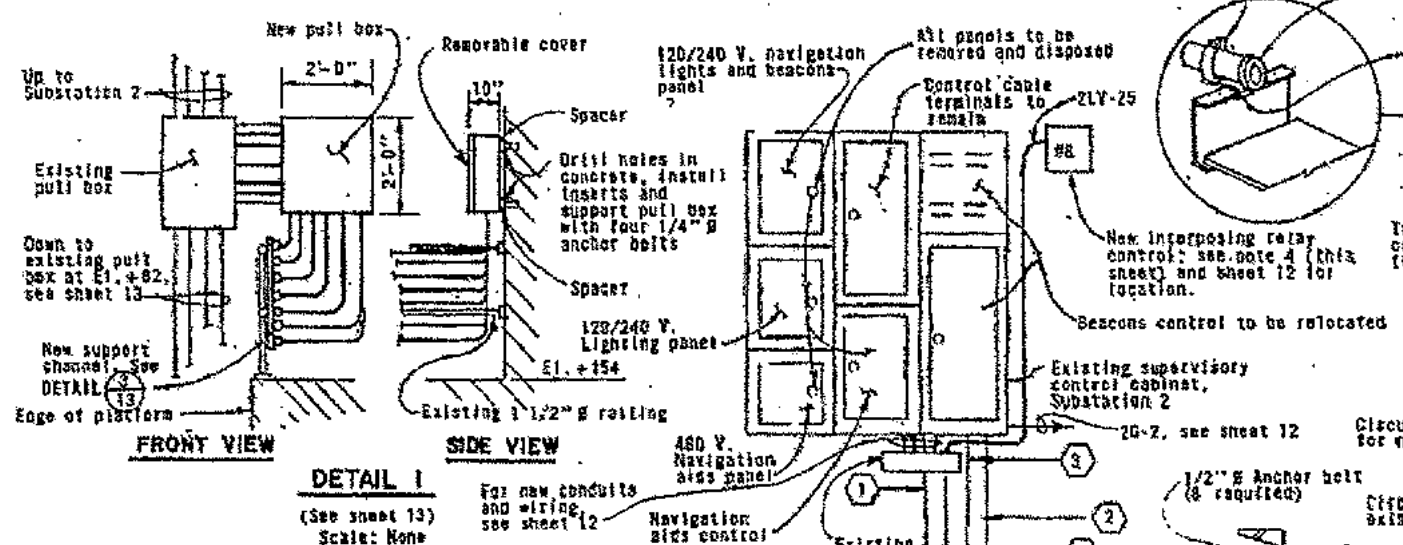
1. For equipment physical location, see sheets 10 and 11.
2. Remove, salvage and store existing L.V.C.C. from substation 1 and install new free standing terminal cabinet in the same location directly occupied by existing L.V.C.C.
3. For circuit schedule, see sheet 11.
4. All work on this sheet is new, unless otherwise indicated.
5. For legend see sheet 2.



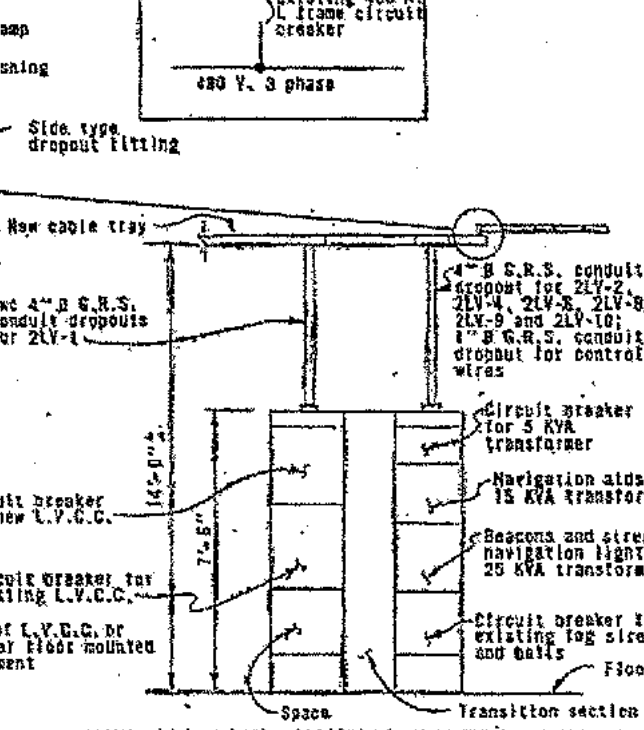
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|--|-----------------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                                   |  |
| DESIGN BY A. LERANOFF  | CITY <i>San Francisco</i>         | SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS.<br>SCHEMATIC - 2 |
| DESIGN BY <i>W. C. J. J. J.</i>  | CITY <i>San Francisco</i>         |  |
| APPROVED BY <i>W. C. J. J. J.</i>  | CITY <i>San Francisco</i>         |  |
| IN CHARGE OF DESIGN <i>Raymond Chen</i>  | APPROVED <i>DECEMBER 3, 1973</i>  |  |
| APPROVAL RECOMMENDED BY <i>W. C. J. J. J.</i>  | APPROVED BY <i>W. C. J. J. J.</i> | SCALE: NONE<br>SHEET NO. 4<br>DRAWING NO. C-4422-4                           |



EXISTING INSTALLATION - SUBSTATION 2



DETAIL I  
(See sheet 13)  
Scale: None



NEW 480V LOW VOLTAGE CONTROL CENTER  
Scale: None

NOTES:

- For symbols see sheet 13.
- For equipment physical location see sheets 12 and 13.
- Dashed lines indicate disconnect and removal; heavy lines indicate new work unless otherwise noted.
- Remove, salvage and store the existing fog sirens and bells code complete with enclosure and install new interposing relay control cabinet in the same location formerly occupied by the existing code.
- For schematics, see sheets 30, 31, 32 and 33.
- For fog signal coding equipment block diagram and synchronized operation chart of fog signals, see sheet 34.

POWER DISTRIBUTION - SUBSTATION W4

CIRCUIT SCHEDULE

| CIRCUIT NUMBER | FROM   | TO  | FOR   | WIRE SIZE         | CONDUIT SIZE        |
|----------------|--|---|---|-------------------|---------------------|
| 2LV-1          | Existing 150 KVA station transformer                             | New and existing L.V.C.C.                                     | 480 V. power  | Three 600 MCM THW | Cable tray          |
| 2LV-2          | New low voltage control center                                   | 15 KVA transformer primary                                    | 480 V. single phase, navigation aids                            | 2 #6 THW          | 1" Ø                |
| 2LV-3          | 15 KVA transformer secondary                                     | Lighting panel "FS"   | 120/240 V. power, navigation aids                               | 3 #8 THW          | 1" Ø                |
| 2LV-4          | New low voltage control center                                   | 5 KVA transformer primary                                     | 480 V. power  | 3 #12 THW         | 3/4" Ø              |
| 2LV-5          | 5 KVA transformer secondary                                      | Lighting panel "U"  | 120/240 V. Power, utilities                                     | 3 #6 THW          | 3/4" Ø              |
| 2LV-6          | New low voltage control center                                   | 25 KVA transformer primary                                    | Power for beacons and navigation lights                         | 2 #4 THW          | 1" Ø                |
| 2LV-7          | 25 KVA transformer secondary                                     | Lighting panel "BL"   | 120/240 V. Power to beacons, nav. lights                        | 3 #2 THW          | 1 1/4" Ø            |
| 2LV-8          | New low voltage control center                                   | Existing 480 V. navigation aids panel at Substation 2         | 480 V. for existing fog sirens, feeder Phase A                  | 2 #6 THW          | 1 1/2" Ø            |
| 2LV-9          |  |   | 480 V. for existing fog sirens, feeder Phase B                  | 2 #6 THW          | 1 1/2" Ø            |
| 2LV-10         |  |   | 480 V. for existing fog sirens, feeder Phase C                  | 2 #6 THW          | 1 1/2" Ø            |
| 2LV-11         | New auxiliary gutter   |   | Power for future fog sirens at Pier W4                          | 2 #6 THW          | 1 1/4" Ø            |
| 2LV-12         | New auxiliary gutter   | Existing pull box at El. +154                                 | Power for future fog sirens at Pier W4                          | 2 #6 THW          | 1 1/4" Ø            |
| 2LV-13         | New auxiliary gutter   |   |   | 2 #6 THW          |                     |
| 2LV-14         | Beacons control cabinet  | Beacons and navigation lights, West-Bay                       | Formerly circuit designated as "E"                              | 3 #4 THW          | 2" Ø                |
| 2LV-15         | Beacons control cabinet  | Beacons and navigation lights, West-Bay                       | Formerly circuit designated as "G"                              | 3 #4 THW          | 2" Ø                |
| 2LV-16         | Current series relays in control cabinet                         | Existing pull box at El. +154                                 | Pier W4 navigation lights                                       | 2 #8 THW          | 1 1/2" Ø            |
| 2LV-17         | Current series relays in control cabinet                         | Existing pull box at El. +154                                 | Pier W4 navigation lights                                       | 3 #8 THW          | 1 1/2" Ø            |
| 2LV-18         | Lighting panel "U"   | Pier W4 interior lights                                       | 120/240 V. power  | 3 #12 THW         |                     |
| 2LV-19         | Lighting panel "U"   | Pier W4 receptacle outlets                                    | 120/240 V. power  | 3 #12 THW         | 1" Ø                |
| 2LV-20         | Lighting panel "U"   | Utility outlets and nav. lights Piers W4, W5                  | 120/240 V. power  | 3 #8 THW          |                     |
| 2LV-21         | From new two door control cabinet in Substation W4, see sheet 31 | Existing terminals in control cable compartment, see sheet 12 | Indications and control for beacons, navigation aids and lights | 10 #14 THW        | 3/4" Ø              |
| 2LV-22         |  |   |   |                   |                     |
| 2LV-23         |  |   |   |                   |                     |
| 2LV-24         |  |   |   |                   |                     |
| 20-1           | Existing ground terminal Substation W4                           | New L.V.C.C.  | Equipment ground  | 1 #1/0 THW        | Via cable tray      |
| 20-2           | Bridge raising north north Pier W4                               | Existing pull box at El. +154                                 | System and equipment ground                                     | 1 #4/0 RHW        | Via exist. raceways |
| 2LV-25         | New coding control   | New interposing relay control                                 | Existing coding control   | 7 #12 THW         | 1" Ø                |

ALTERED INSTALLATION AT SUBSTATION W4

STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION

San Francisco-Oakland Bay Bridge  
ELECTRICAL ALTERATIONS

SCHEMATIC - 3

APPROVED: DECEMBER 3, 1972

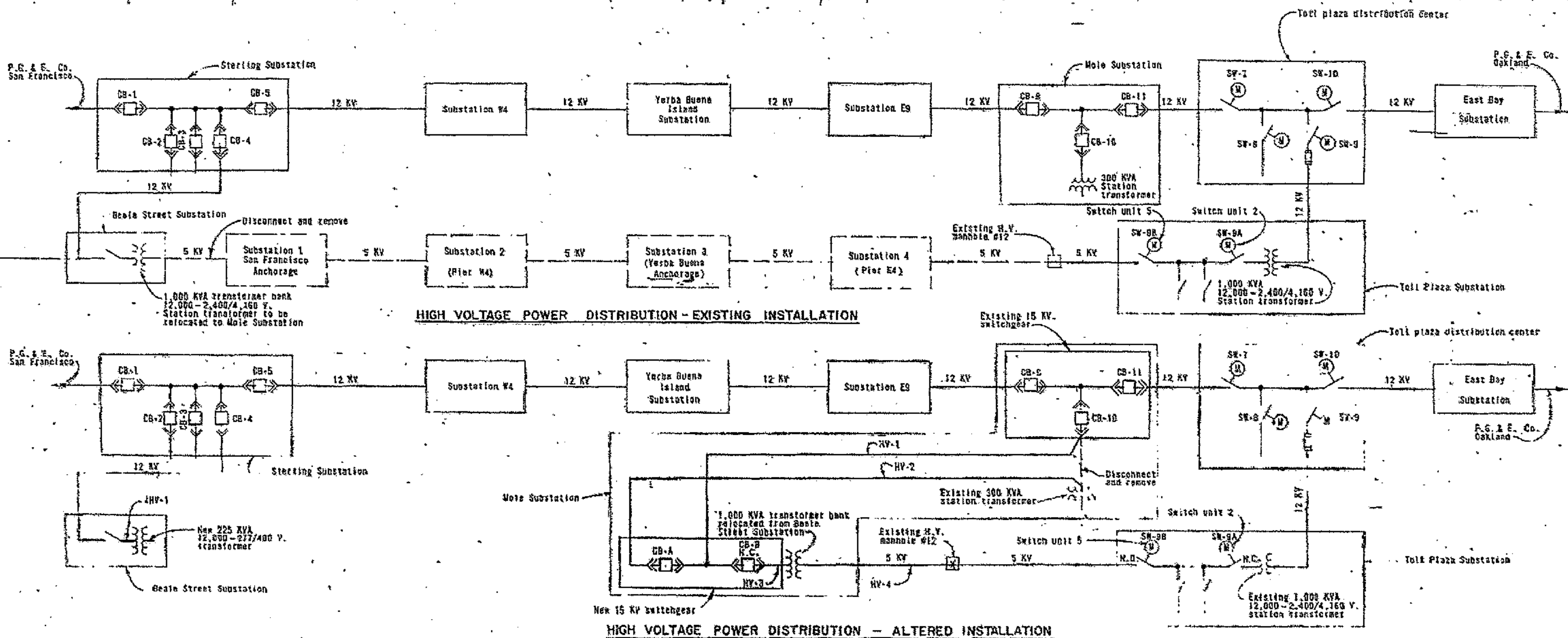
APPROVAL RECOMMENDED: [Signature]

APPROVED: [Signature]

SCALE: NONE

SHEET NO. 5

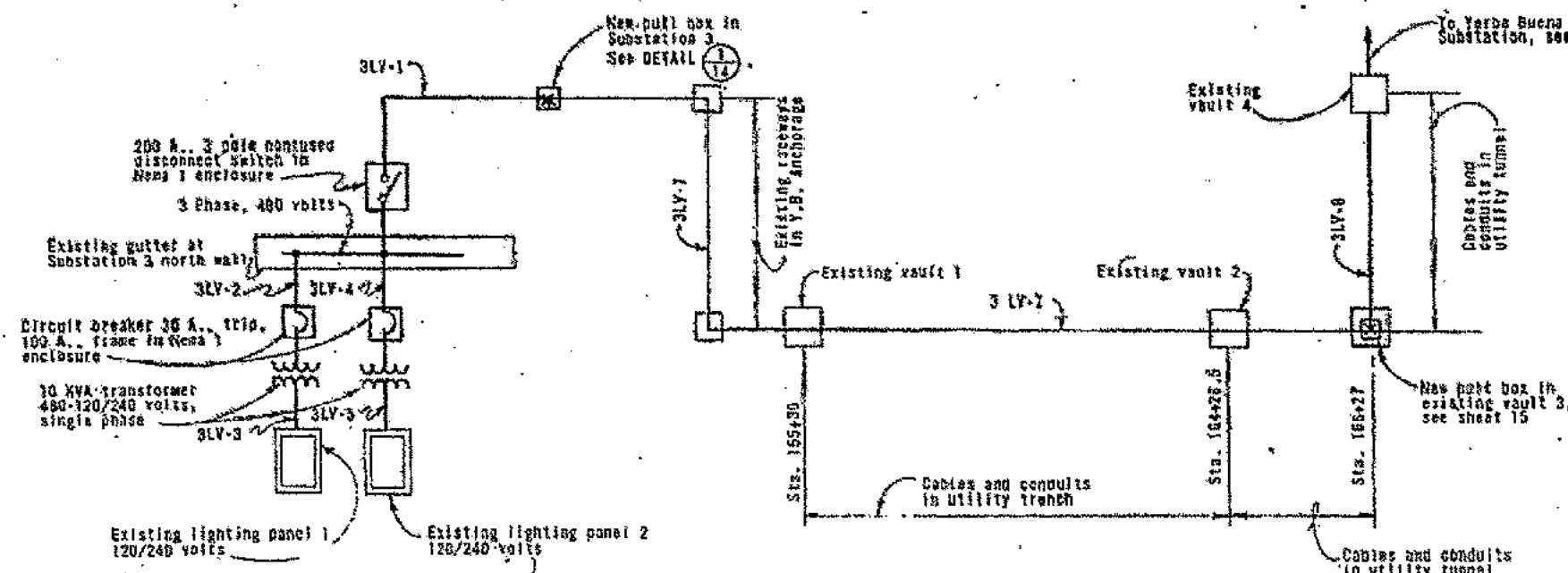
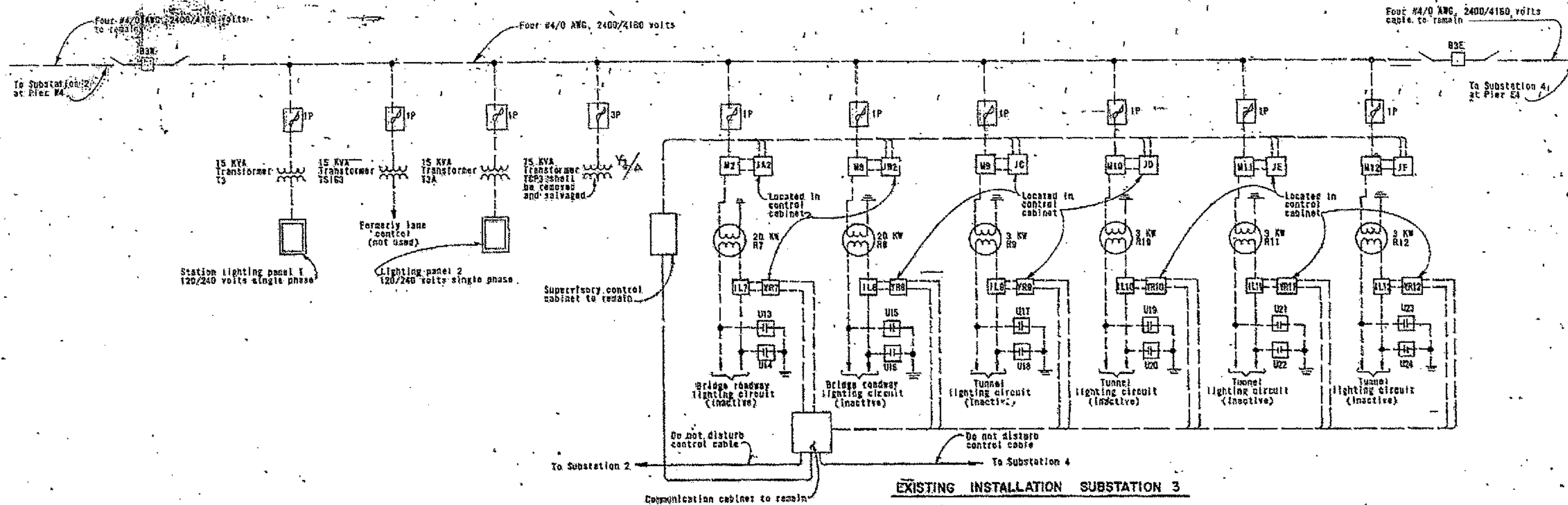
REVISION NO. 0-44122-5



# NOTES

1. For circuit schedule see sheet 37.
2. Dashed lines indicate disconnect; heavy lines indicate new work unless otherwise noted.
3. All work on this sheet is existing except as indicated.

|  |                         |                            |  |
|--|-------------------------|----------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                         |                            |  |
| DESIGN: J. A. ABRAMOFF   | CHECKED: J. A. ABRAMOFF | APPROVED: DECEMBER 3, 1973 |  |
| DRAWN: J. A. ABRAMOFF  | CHECKED: J. A. ABRAMOFF | APPROVED: DECEMBER 3, 1973 |  |
| IN CHARGE OF DESIGN: J. A. ABRAMOFF  | CHECKED: J. A. ABRAMOFF | APPROVED: DECEMBER 3, 1973 |  |
| APPROVAL RECOMMENDED: J. A. ABRAMOFF   |                         | APPROVED: DECEMBER 3, 1973 |  |
| APPROVED: DECEMBER 3, 1973   |                         | APPROVED: DECEMBER 3, 1973 |  |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                         |                            |  |
| ELECTRICAL ALTERATIONS   |                         |                            |  |
| SCHEMATIC - 4  |                         |                            |  |
| SCALE: NONE  | SHEET NO: 6             | DRAWING NO: C-44122-6      |  |



CIRCUIT SCHEDULE

| CIRCUIT NUMBER | FROM                                   | TO                               | FOR                                  | WIRE SIZE                              | CONDUIT SIZE  |
|----------------|--|----------------------------------|--------------------------------------|--|---------------|
| 3LV-1          | New pull box in Substation 3           | 200 A., 3 pole Disconnect Switch | 480 Volts Power                      | 3 #4/0 THW                             | 2" F          |
| 3LV-2          | Existing gutter                        | 10 KVA Transformer               | 480 Volts Power and Ground           | 2 #10 THW & 1 #8 THW                   | 3/4" B        |
| 3LV-3          | 10 KVA Transformer                     | Existing lighting panel          | Lighting Panel 1 120/240 Volts Power | 3 #8 THW                               | 2" F          |
| 3LV-4          | Existing gutter                        | 10 KVA Transformer               | 480 Volts Power and Ground           | 2 #10 THW & 1 #8 THW                   | 3/4" B        |
| 3LV-5          | 10 KVA Transformer                     | Existing lighting panel          | Lighting Panel 2 120/240 Volts Power | 3 #8 THW                               | 1" F          |
| 3LV-7          | New pull box in Vault 3                | New pull box in Substation 3     | 480 Volts Power from                 | Existing 3 #4/0 AWG & 3 #1/8 AWG Cable | Existing 4" B |
| 3LV-8          | Existing L.V.C.C. in Y.S.I. Substation | New pull box in Vault 3          | 480 Volts Power                      | 3 #4/0 THW                             | 2" F          |
| 3LV-1          | Bridge railing North YAI               | Existing gutter Substation 3     | Equipment ground                     | #4/0 RHW                               | 1 1/2" B      |

\* For existing cable cross section, see sheet 15

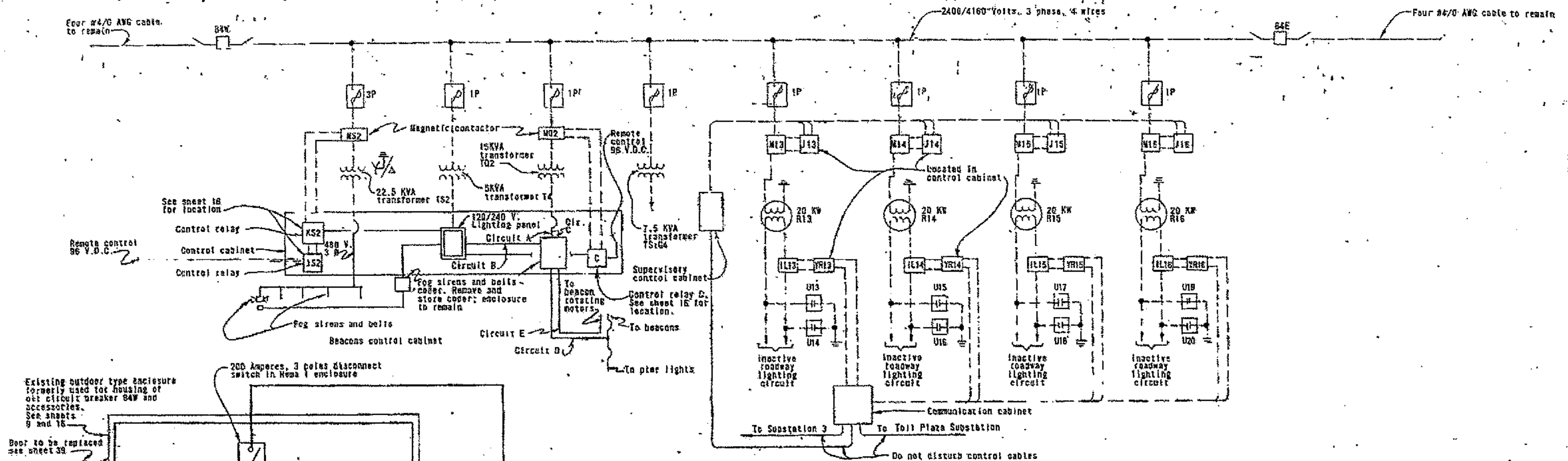
NOTES

1. Heavy lines indicate new work, dashed lines indicate disconnect and removal, unless otherwise noted.
2. For equipment physical location see sheets 14 and 15.
3. Disconnect, remove and dispose of all existing equipment unless it is otherwise indicated.

SCALE IN INCHES ON ORIGINAL  
0 1 2 3 4

|  |                            |                                  |                       |
|--|----------------------------|----------------------------------|-----------------------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                            |                                  |                       |
| DESIGNER: MACAGRAMOFF  | DATE: 12/3/73              | SAN FRANCISCO-OAKLAND BAY BRIDGE |                       |
| DRAWN BY: J. J. J. J.  | CHECKED BY: J. J. J. J.    | ELECTRICAL ALTERATIONS           |                       |
| IN CHARGE OF DESIGN: Raymond Chan  | APPROVED: DECEMBER 3, 1973 | SCHEMATIC - 5                    |                       |
| APPROVAL: J. J. J. J.  | DATE: 12/3/73              | SCALE: NONE                      | DRAWING NO. C-44122-7 |





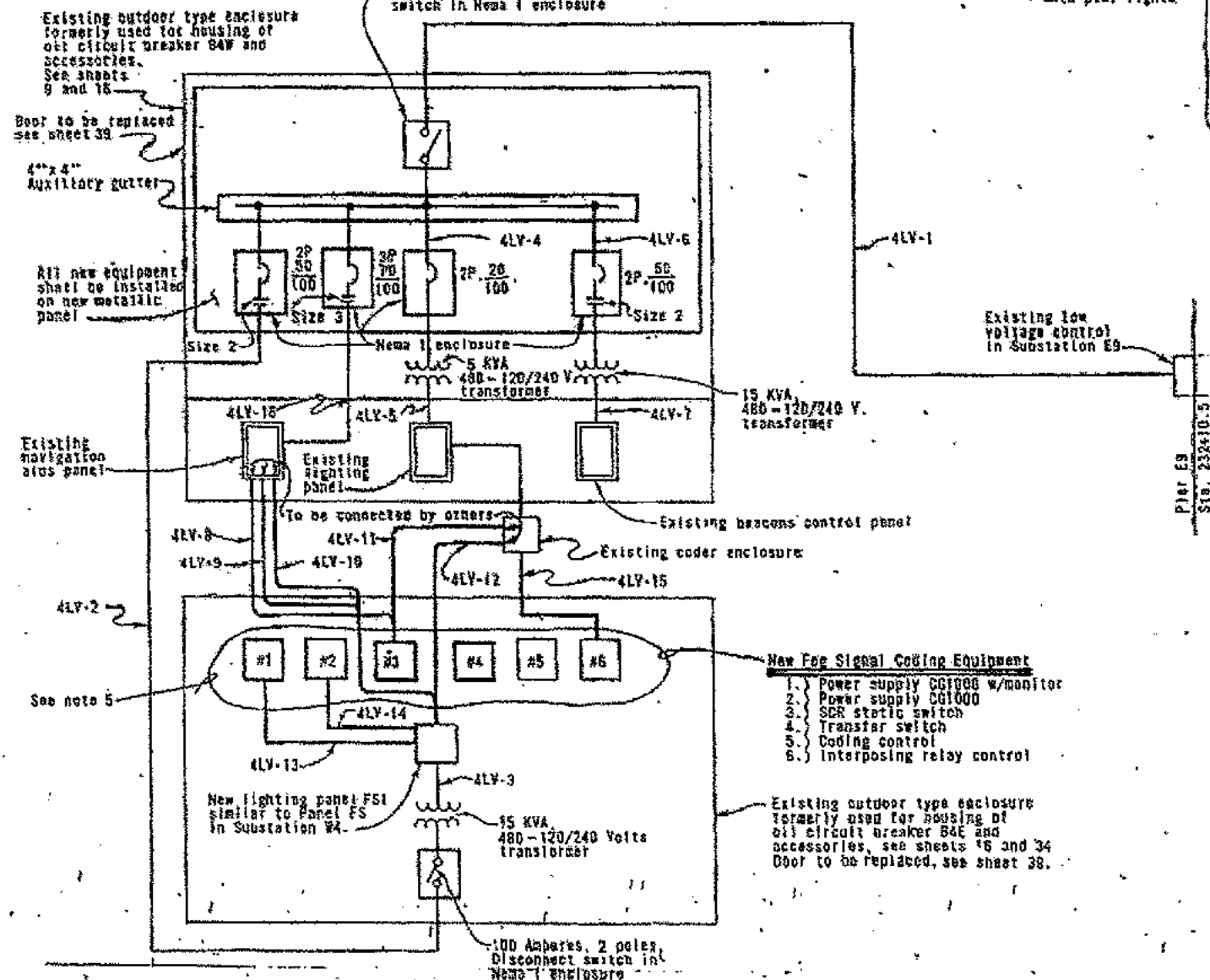
EXISTING INSTALLATION - SUBSTATION 4

CIRCUIT SCHEDULE

| CIRCUIT NUMBER | FROM                               | TO   | FOR  | WIRE SIZE            | CONDUIT SIZE                   |
|----------------|------------------------------------|--|--|----------------------|--------------------------------|
| 4LV-1          | Existing L.V.C.C. in Substation E9 | Disconnect switch in Substation 4  | 3 phase, 480 V. power                          | 3 #4/0 AWG           | Armor cable                    |
| 4LV-2          | Auxiliary gutter                   | 15 KVA transformer primary   | 480 V. single phase power and ground           | 2 #8 THW & 1 #8 THW  | 1" flexible LT                 |
| 4LV-3          | 15 KVA transformer secondary       | New lighting panel FS  | 120/240 V. power navigation aids               | 3 #6 THW             | 1" flexible                    |
| 4LV-4          | Auxiliary gutter                   | 5 KVA transformer primary  | 480 V. single phase power and ground           | 2 #10 THW & 1 #8 THW | 1 1/2" flexible                |
| 4LV-5          | 5 KVA transformer secondary        | Existing lighting panel  | 120/240 V. power                               | 3 #8 THW             | 1" flexible                    |
| 4LV-6          | Auxiliary gutter                   | 15 KVA transformer primary   | 480 V. single phase power and ground           | 2 #8 THW & 1 #8 THW  | 1" flexible                    |
| 4LV-7          | 15 KVA transformer secondary       | Existing Beacons Control panel   | 120/240 V. power                               | 3 #6 THW             | 1" flexible                    |
| 4LV-8          | SCR static switch                  | To existing navigation aids panel for future fog sirens and bells at E2 and E5 | Power for future fog sirens at Pier E2         | 2 #8 THW             | 3/4" flexible LT               |
| 4LV-9          | New lighting panel FS1             | To existing navigation aids panel for future fog sirens and bells at E2 and E5 | Power for future fog bells at Pier E5          | 2 #8 THW             | 3/4" flexible LT               |
| 4LV-10         | New lighting panel FS2             | To existing navigation aids panel for future fog sirens and bells at E2 and E5 | Power for future fog bells at Pier E5          | 2 #8 THW             | 1/2" flexible LT               |
| 4LV-11         | SCR static switch                  | To existing coder enclosure for future fog sirens and bells at E3 and E5       | Power for future fog sirens at Pier E3         | 2 #8 THW             | 1/2" flexible LT               |
| 4LV-12         | New lighting panel FS1             | To existing coder enclosure for future fog sirens and bells at E3 and E5       | Power for future fog bells at Pier E5          | 2 #8 THW             | 1/2" flexible LT               |
| 4LV-13         | Power supply C61000 w/monitor      | New lighting panel FS1   | Fog signal coding equipment (120/240 V. power) | 3 #12 THW            | 1 1/2" flexible                |
| 4LV-14         | Power supply C61000                | New lighting panel FS1   | Fog signal coding equipment (120/240 V. power) | 3 #12 THW            | 1 1/2" flexible                |
| 4LV-15         | New interposing relay control      | Existing coder enclosure   | Existing coding control                        | 8 #8 THW             | 1" flexible LT                 |
| 4LV-16         | Auxiliary gutter                   | Existing navigation aids panel   | Existing 480 V. fog sirens and bells           | 3 #4 THW             | 1 1/4" flexible G.R.S. conduit |

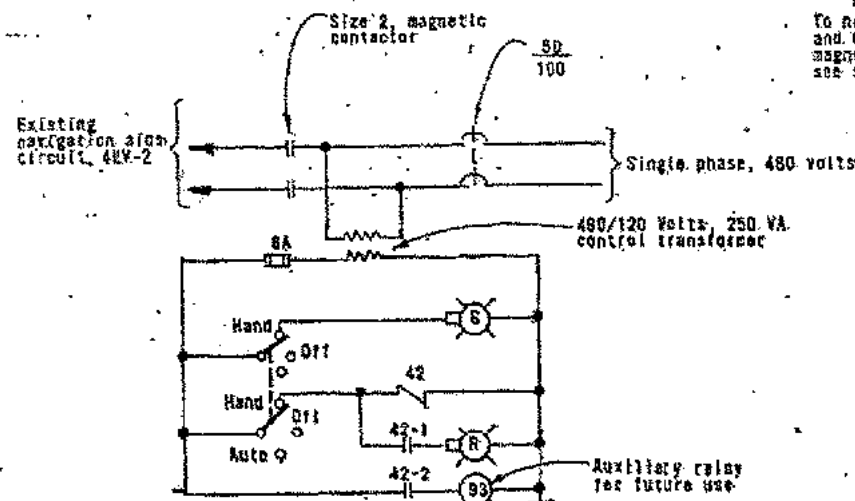
NOTES

- For equipment physical location, see sheets 9, 16 and 34.
- For schematics see sheets 9, 30, 31 and 34.
- Dashed lines indicate disconnect and removal; heavy lines indicate new work unless otherwise noted.
- Disconnect, remove and dispose of all existing equipment unless it is otherwise indicated.
- Interconnecting wires for new fog signal coding equipment not shown. For fog signal coding equipment block diagram and synchronized operation chart of fog signals, see sheet 34.

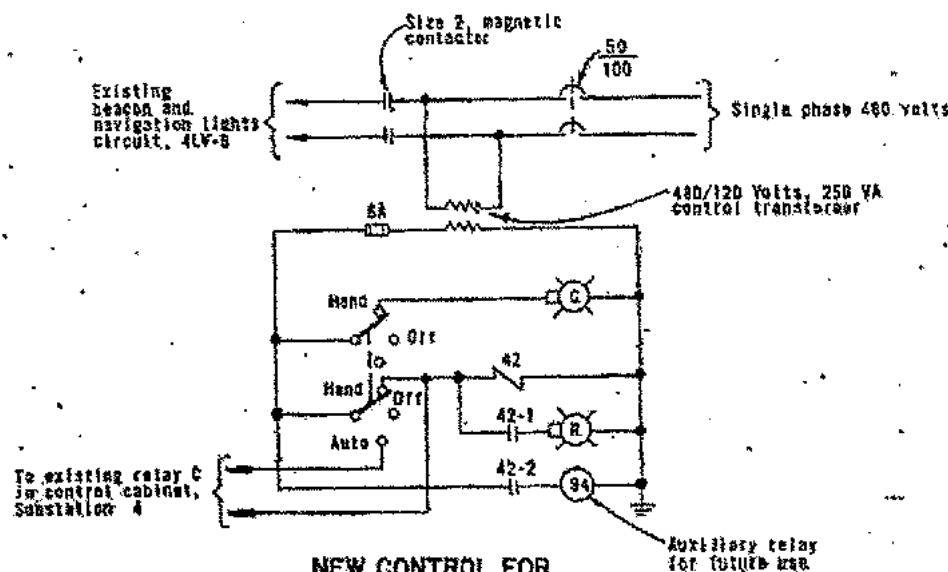


ALTERED INSTALLATION AT SUBSTATION 4

|  |  |                                  |  |
|--|--|----------------------------------|--|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |  | SAN FRANCISCO-OAKLAND BAY BRIDGE |  |
| DESIGNED BY: [Signature]   |  | ELECTRICAL ALTERATIONS           |  |
| CHECKED BY: [Signature]  |  | SCHEMATIC-6                      |  |
| IN CHARGE OF DESIGN: [Signature]   |  | TOLD NONE                        |  |
| APPROVAL: [Signature]  |  | DATE: 8                          |  |
| DATE: 12/2/73  |  | DRAWING NO. C-44122-8            |  |



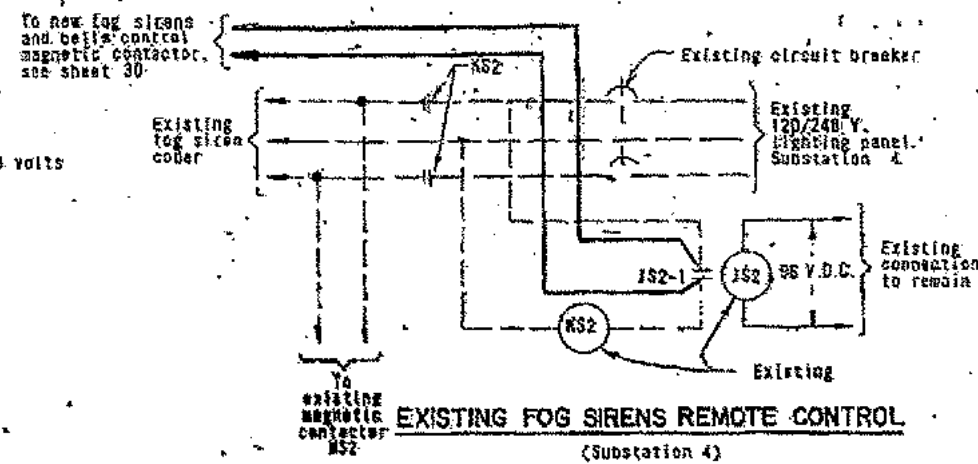
**NEW FOG SIRENS AND BELL CONTROL**  
(Substation 4)



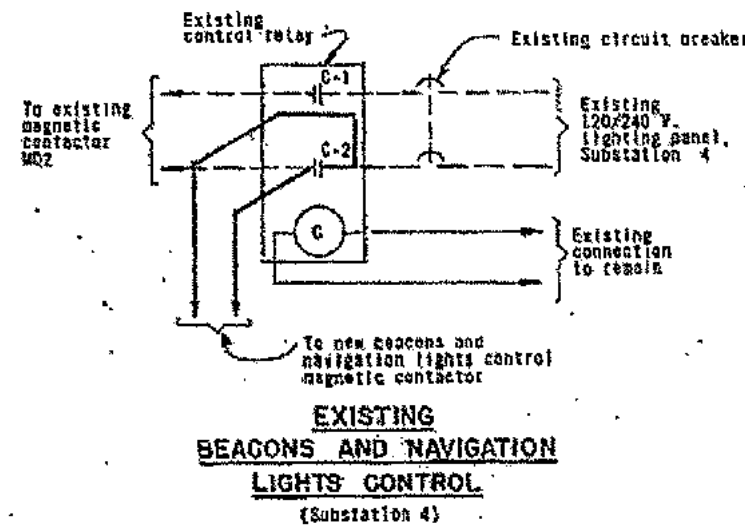
**NEW CONTROL FOR BEACONS AND NAVIGATIONAL LIGHTS**  
(Substation 4)

#### NEW EQUIPMENT DESCRIPTION

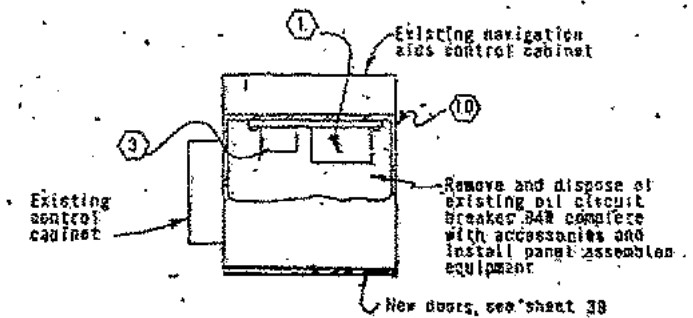
1. 200 Amps., 3 pole, disconnect switch in NEMA 1 enclosure
2. Magnetic contactor and circuit breaker combination in NEMA 1 enclosure for existing fog sirens and bells, circuit 4LV-2.
3. Circuit breaker in NEMA 1 enclosure for existing lighting panel.
4. 4"x4" Auxiliary gutter
5. Magnetic contactor and circuit breaker combination in NEMA 1 enclosure for navigation aids control, circuit 4LV-2.
6. Magnetic contactor and circuit breaker combination in NEMA 1 enclosure for beacons and navigation lights control, circuit 4LV-8.
7. 15 KVA, 480-120/240 volts, single phase floor mounted dry type transformer, for beacons and navigation lights power.
8. 5 KVA, 480-120/240 volts, single phase floor mounted dry type transformer for lighting panel.
9. #12 Gauge galvanized steel sheet panel for equipment, as shown; shall be painted as specified. Size 1'-6" x 7'-6" x 1/2".
10. Outdoor type enclosure formerly used for oil circuit breaker B&W.



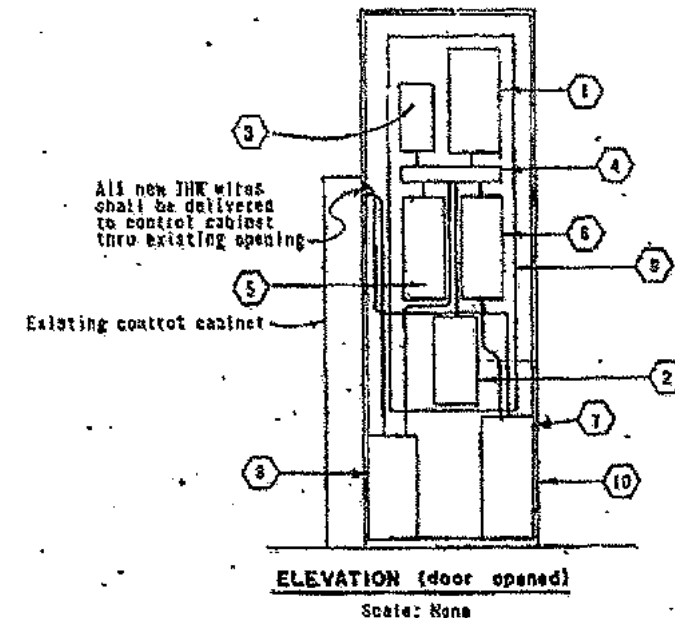
**EXISTING FOG SIRENS REMOTE CONTROL**  
(Substation 4)



**EXISTING BEACONS AND NAVIGATION LIGHTS CONTROL**  
(Substation 4)

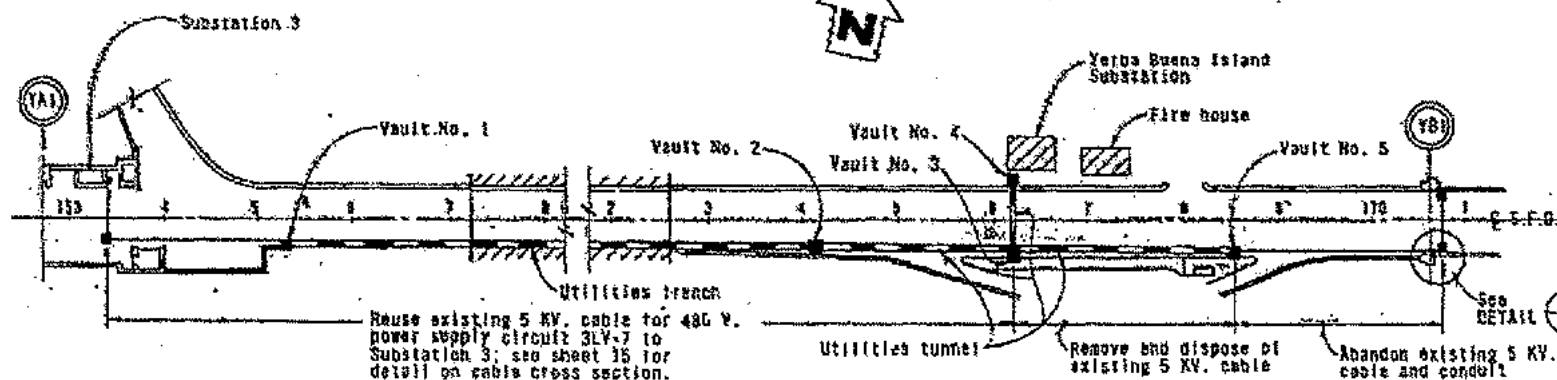


**PLAN**  
Scale: None



**ELEVATION (door opened)**  
Scale: None

**NEW EQUIPMENT INSTALLATION**  
(Formerly oil circuit breaker B&W at Substation 4)



**YERBA BUENA ISLAND - LOWER DECK**

Scale: None

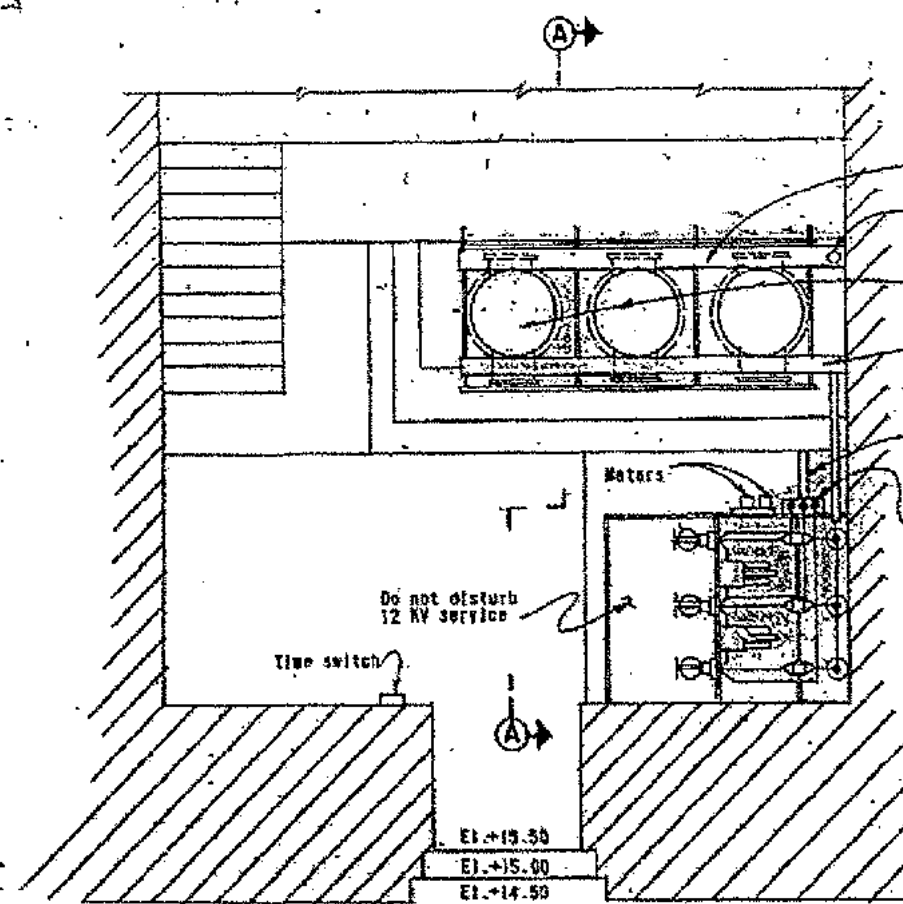
#### NOTES

1. For equipment physical location, see sheet 16.
2. Dashed lines indicate disconnect and removal; heavy lines indicate new work unless otherwise noted.
3. For additional schematic, see sheets 8, 30, 31 & 34.
4. For circuit schedule, see sheet 8.

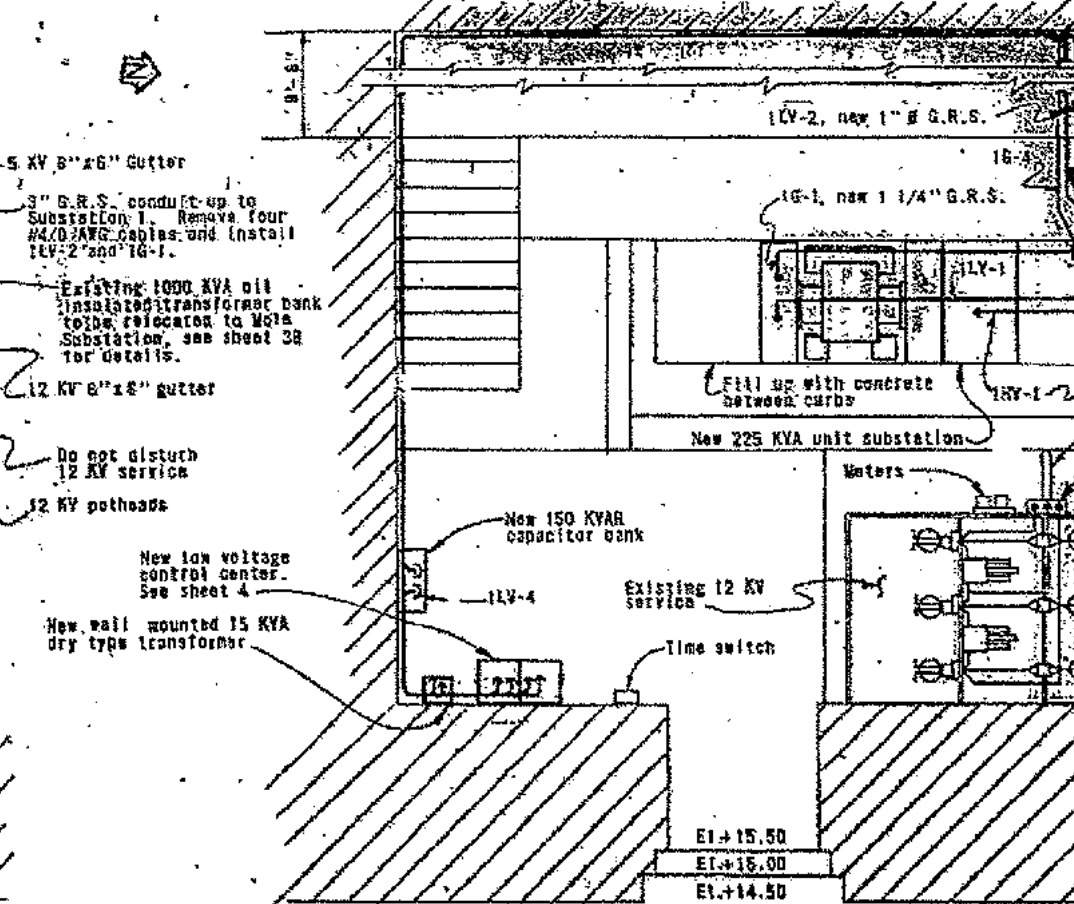
SCALE IN INCHES ON ORIGINAL  
0 1 2 3 4

|  |                            |                            |         |
|--|----------------------------|----------------------------|---------|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                            |                            |         |
| DESIGN   | BY A. ABRAHAM              | DATE                       | 12/3/73 |
| DRAWN  | BY E. ABRAHAM              | DATE                       | 12/3/73 |
| IN CHARGE OF DESIGN  | APPROVED, DECEMBER 3, 1973 |                            |         |
| APPROVAL RECOMMENDED   |                            | APPROVED, DECEMBER 3, 1973 |         |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                            | SCHEMATIC-7                |         |
| ELECTRICAL ALTERATIONS   |                            | SCALE: NONE                |         |
| SHEET NO. 9  |                            | DRAWING NO. C-44122-9      |         |

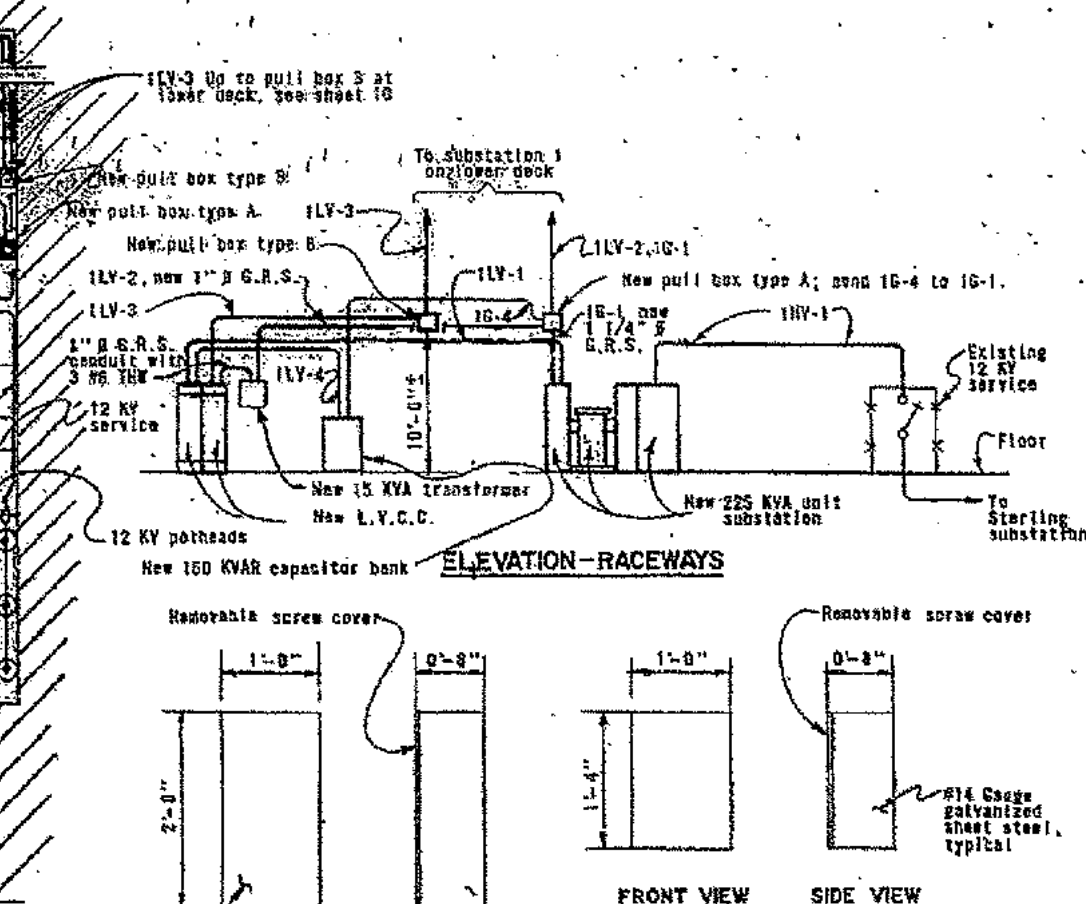




PLAN - EXISTING BEALE STREET SUBSTATION  
Scale: 1/4" = 1'-0"



PLAN - ALTERED BEALE STREET SUBSTATION  
Scale: 1/4" = 1'-0"



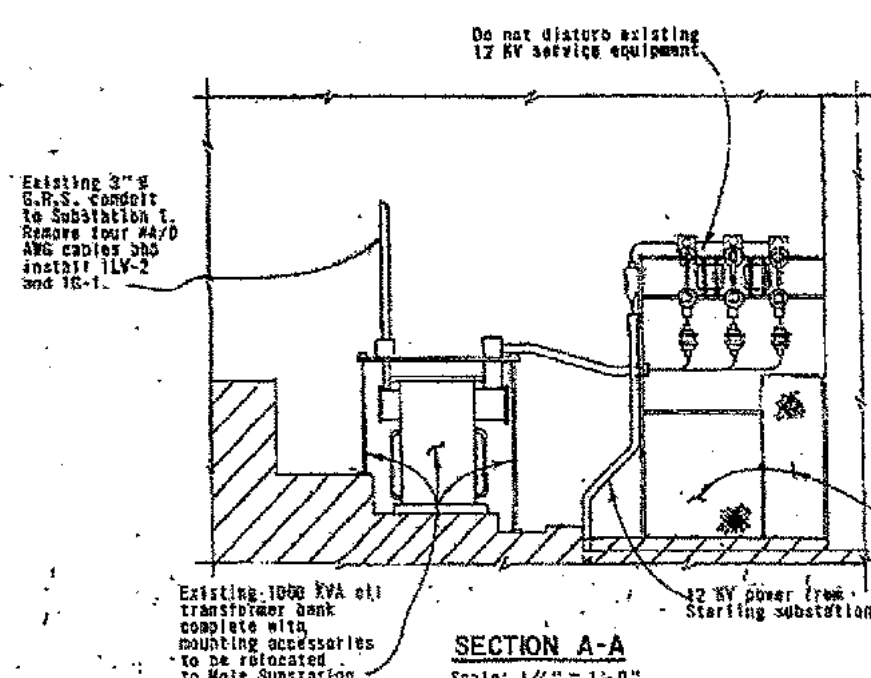
FRONT VIEW SIDE VIEW  
PULL BOX TYPE A  
No Scale  
FRONT VIEW SIDE VIEW  
PULL BOX TYPE B  
No Scale

CIRCUIT SCHEDULE

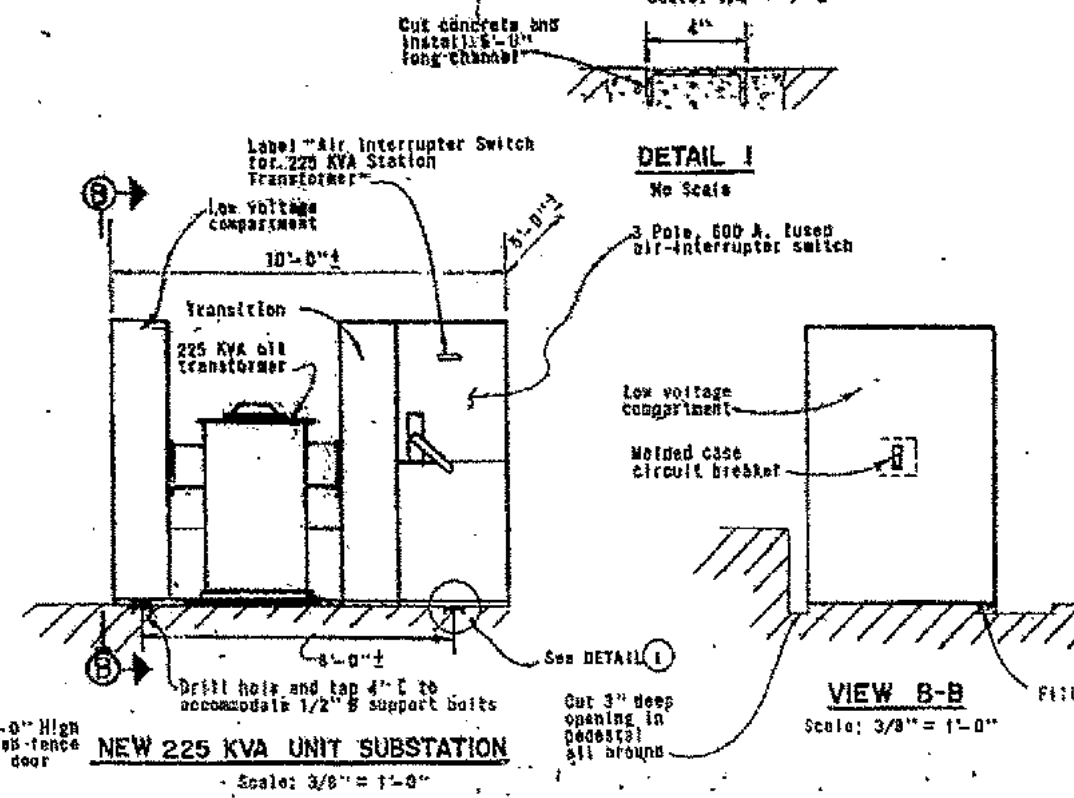
| CIRCUIT NUMBER | FROM                                      | TO                                      | FOR   | WIRE SIZE                    | G.R.S. CONDUIT SIZE |
|----------------|---|---|---|------------------------------|---------------------|
| 1KV-1          | 12 KV service                             | Unit substation                         | Transformer primary                         | 3 #1/0 AWG 19-KV Code        | New 4" x            |
| 1KV-1          | Unit substation                           | L.V.C.C.                                | 480 V. power and ground                     | 3 500 MCM THW and 1 #1/0 THW | New 3" x            |
| 1KV-1          | Unit substation to Beale St. Substation   | Pull box type A in substation 1         | System and equipment ground                 | #4/0 RHW                     | Existing 3" x       |
| 1KV-2          | 15 KVA transformer                        |   | 120/240 V. power to existing lighting panel | 3 #6 THW                     |                     |
| 1KV-2          | Pull box type A in substation 1           | 6" x 6" x 6" Pull box                   | Ground wire                                 | #4/0 RHW                     | New 2" x            |
| 1KV-2A         |   | Existing lighting panel                 | 120/240 V. power                            | 3 #6 THW                     | New 1" x            |
| 1KV-3          | L.V.C.C.                                  | Pull box type B, lower deck             | 480 V. power & control to S. F. signs       | 10 #6 THW and 4 #14 THW      | New 2" x            |
| 1KV-3A         | Pull box type B, lower deck, substation 1 | Terminal cabinet, substation 1          | 480 V. power and control to S. F. signs     | 10 #6 THW and 4 #14 THW      | New 2" x            |
| 1KV-3          | Pull box type A in substation 1           | Existing ground in gutter, substation 1 | Ground wire                                 | #4/0 RHW                     | New 1" x            |
| 1KV-4          | Capacitor bank                            | Pull box type A in Beale St. substation | Ground wire                                 | #4/0 RHW                     | New 1" x            |
| 1KV-4          | Capacitor circuit breaker in L.V.C.C.     | Capacitor bank                          | Line connection                             | 3 500 MCM THW                | New 3" x            |

NOTES

1. For schematic see sheet 4.
2. For raceways continuation see sheet 10.
3. Heavy lines indicate new work.
4. For pull boxes A and B see this sheet and sheet 10.



SECTION A-A  
Scale: 1/4" = 1'-0"



NEW 225 KVA UNIT SUBSTATION  
Scale: 3/8" = 1'-0"

VIEW B-B  
Scale: 3/8" = 1'-0"

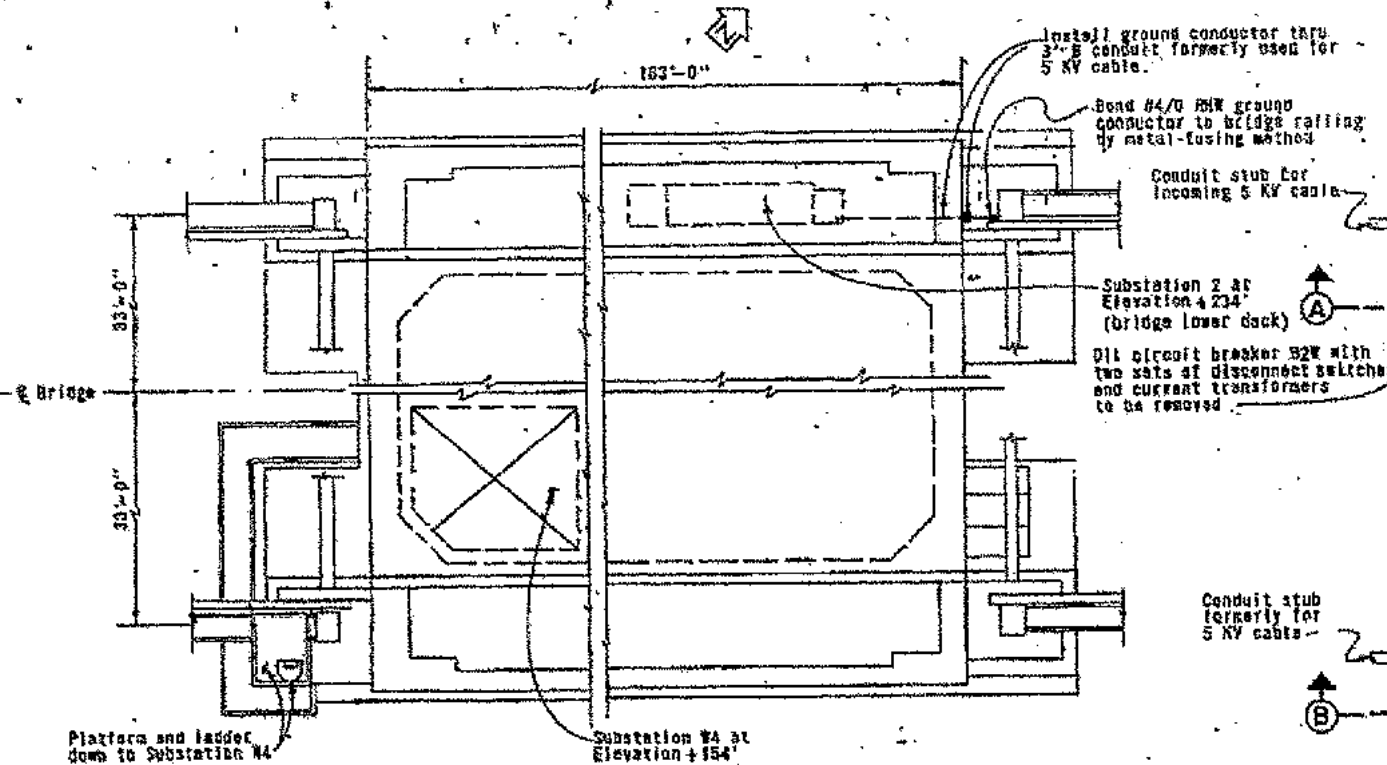
STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION

SAN FRANCISCO - OAKLAND BAY BRIDGE  
ELECTRICAL ALTERATIONS  
SUBSTATION AT BEALE STREET

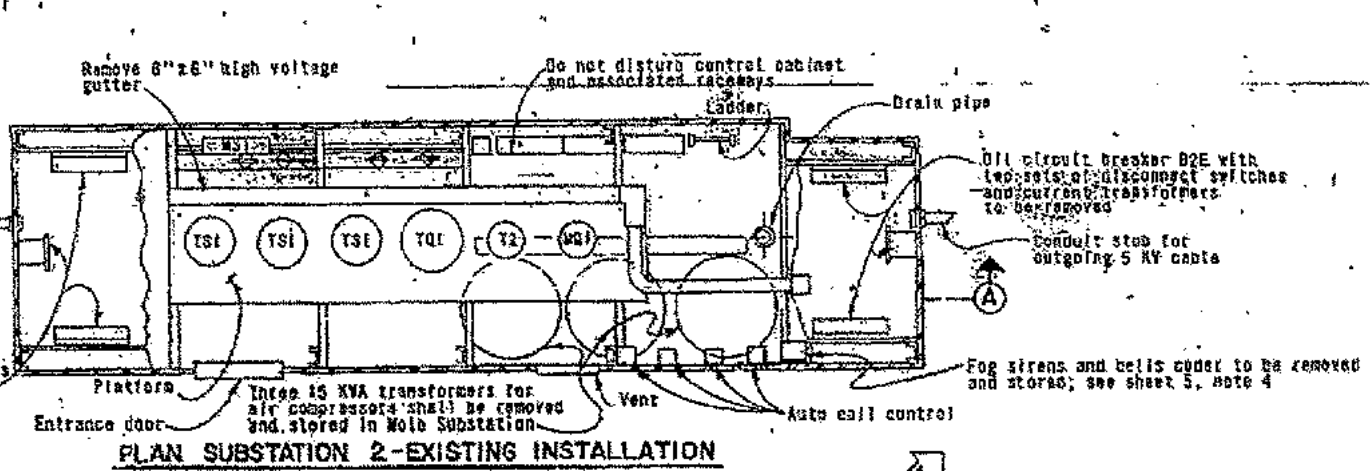
APPROVED: DECEMBER 3, 1975  
Raymond Chen  
Karl S. Sear

AS NOTED  
11  
DESIGNED BY: 64-4122-11

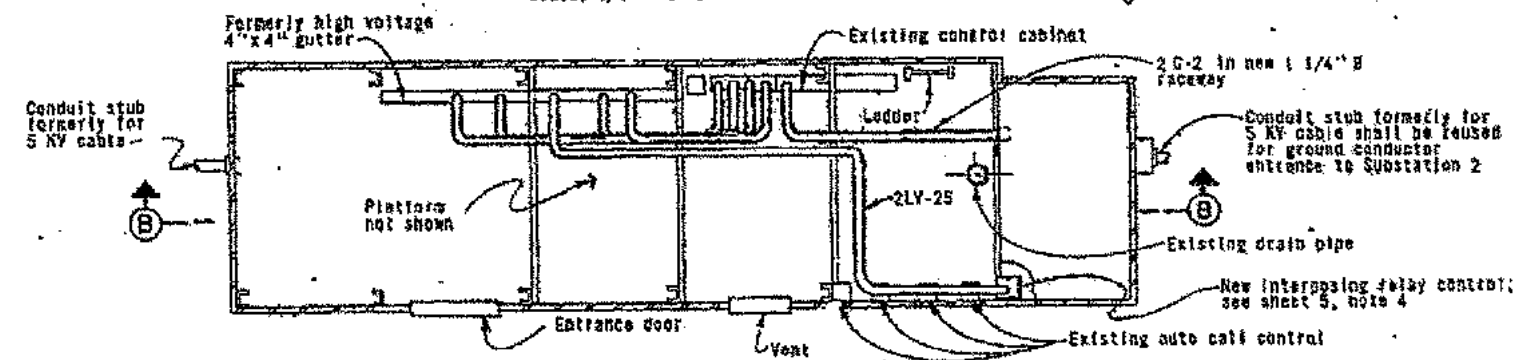




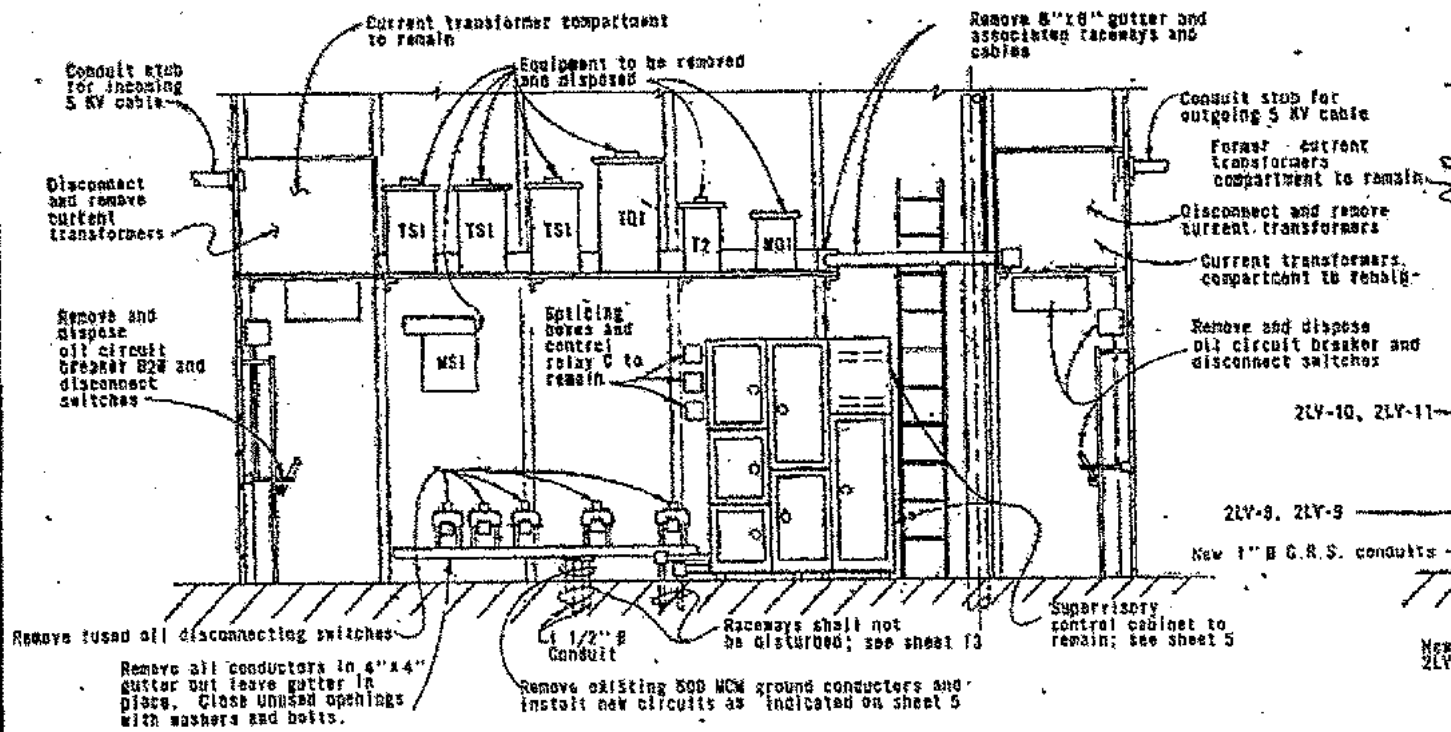
PLAN - PIER W4  
Scale: 1/8" = 1'-0"



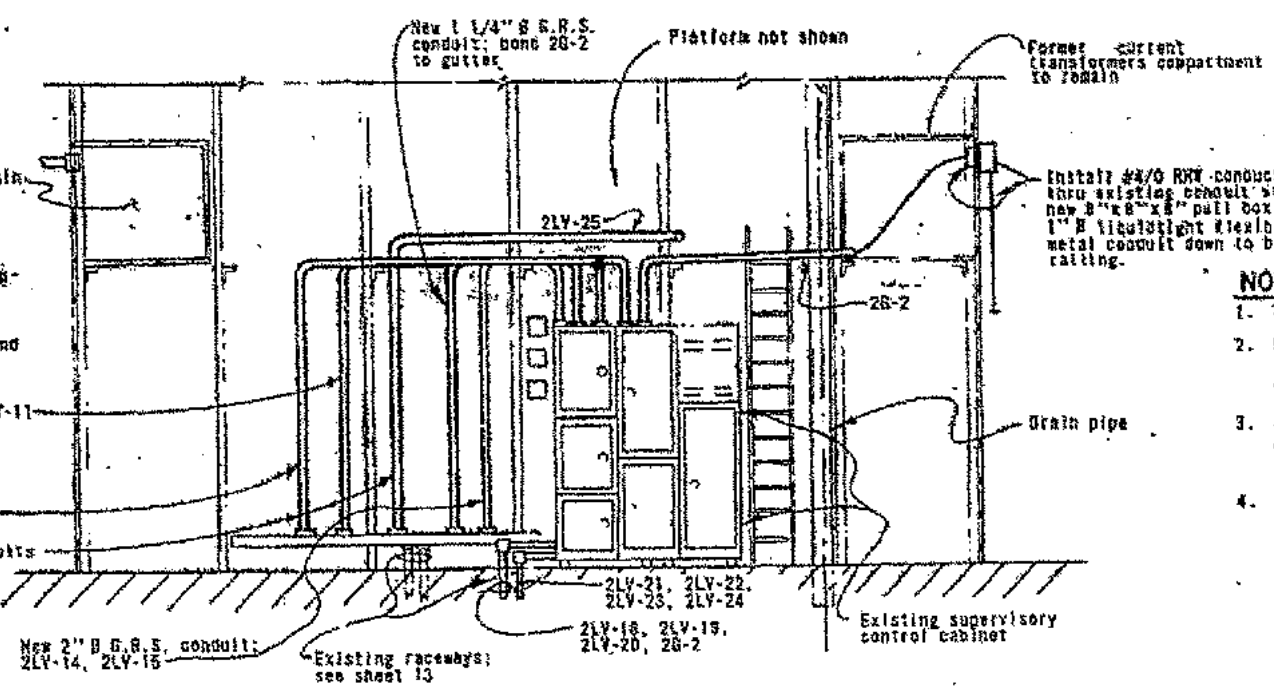
PLAN SUBSTATION 2 - EXISTING INSTALLATION  
Scale: 1/4" = 1'-0"



PLAN SUBSTATION 2 - ALTERED INSTALLATION  
Scale: 1/4" = 1'-0"



SECTION A-A  
Scale: 1/4" = 1'-0"

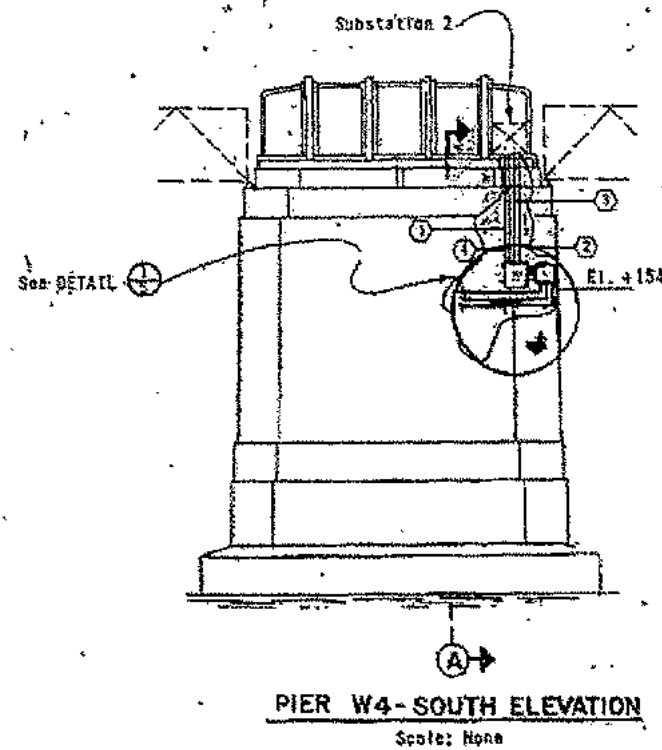


SECTION B-B  
Scale: 1/4" = 1'-0"

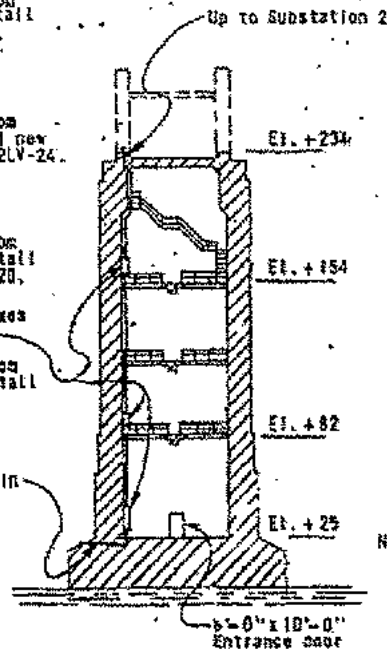
- NOTES**
1. For schematics see sheet 5.
  2. Remove and dispose of all existing equipment, raceways and cables unless otherwise indicated.
  3. All new raceways shall be galvanized rigid steel conduits of sizes as indicated.
  4. For circuit schedule see sheet 5.



|  |                 |                         |   |
|--|-----------------|-------------------------|---|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                 |                         |   |
| DESIGN   | BY: A. ABRAMOFF | CHECKED: [Signature]    | APPROVED: DECEMBER 3, 1973<br>[Signature] |
| OWNER  | BY: [Signature] | CHECKED: [Signature]    |   |
| IN CHARGE OF DESIGN  | [Signature]     |                         |   |
| APPROVAL RECOMMENDED   | [Signature]     |                         |   |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                 | SUBSTATION 2 ALTERATION |   |
| SCALE  | AS NOTED        | SHEET NO. 12            | SHOWING NO. C-54122-12                    |



- 1 Remove all existing conductors from existing 1 1/2" B conduit and install new circuits 2LV-8, 2LV-9, 2LV-10, 2LV-11, 2LV-25
- 2 Remove all existing conductors from existing 1" B conduit and install new circuits 2LV-21, 2LV-22, 2LV-23, 2LV-24
- 3 Remove all existing conductors from existing 1 1/2" B conduit and install new circuits 2LV-16, 2LV-19, 2LV-20, 2LV-2
- 4 Remove all existing conductors from existing 1 1/2" B conduit and install new circuits 2LV-14, 2LV-15



Intercept existing lighting circuit in existing junction box and install 3/4" B G.R.S. conduits to new lighting

New 100 watt lamp (typical)

4" B and 1" B G.R.S. conduit dropouts

Two 4" B G.R.S. conduit dropouts

New 100 watt lamp (typical)

Support new cable tray at 5'-0" intervals. See DETAIL 2

3" B G.R.S. conduit dropouts

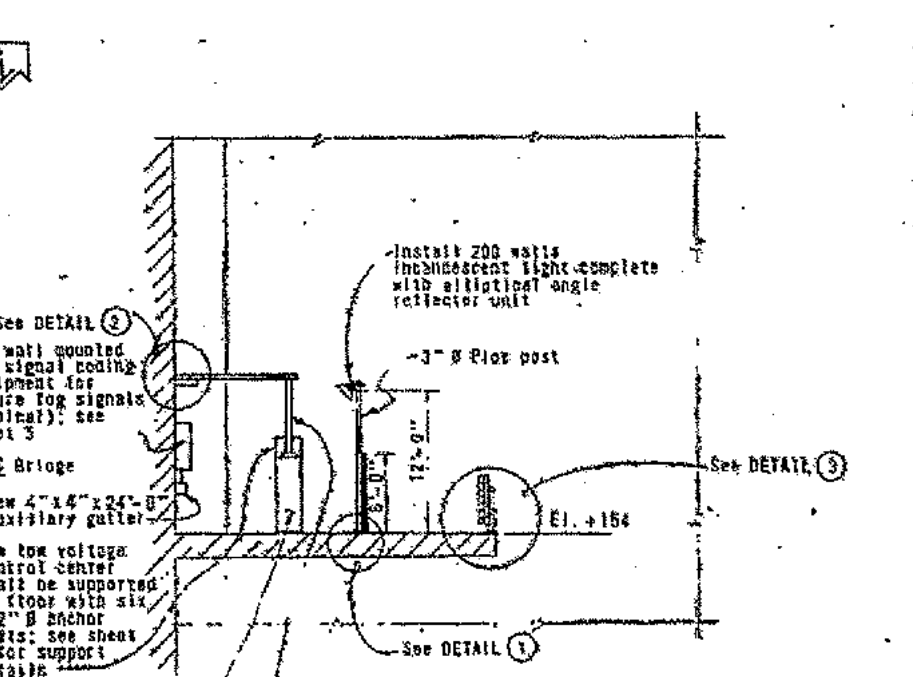
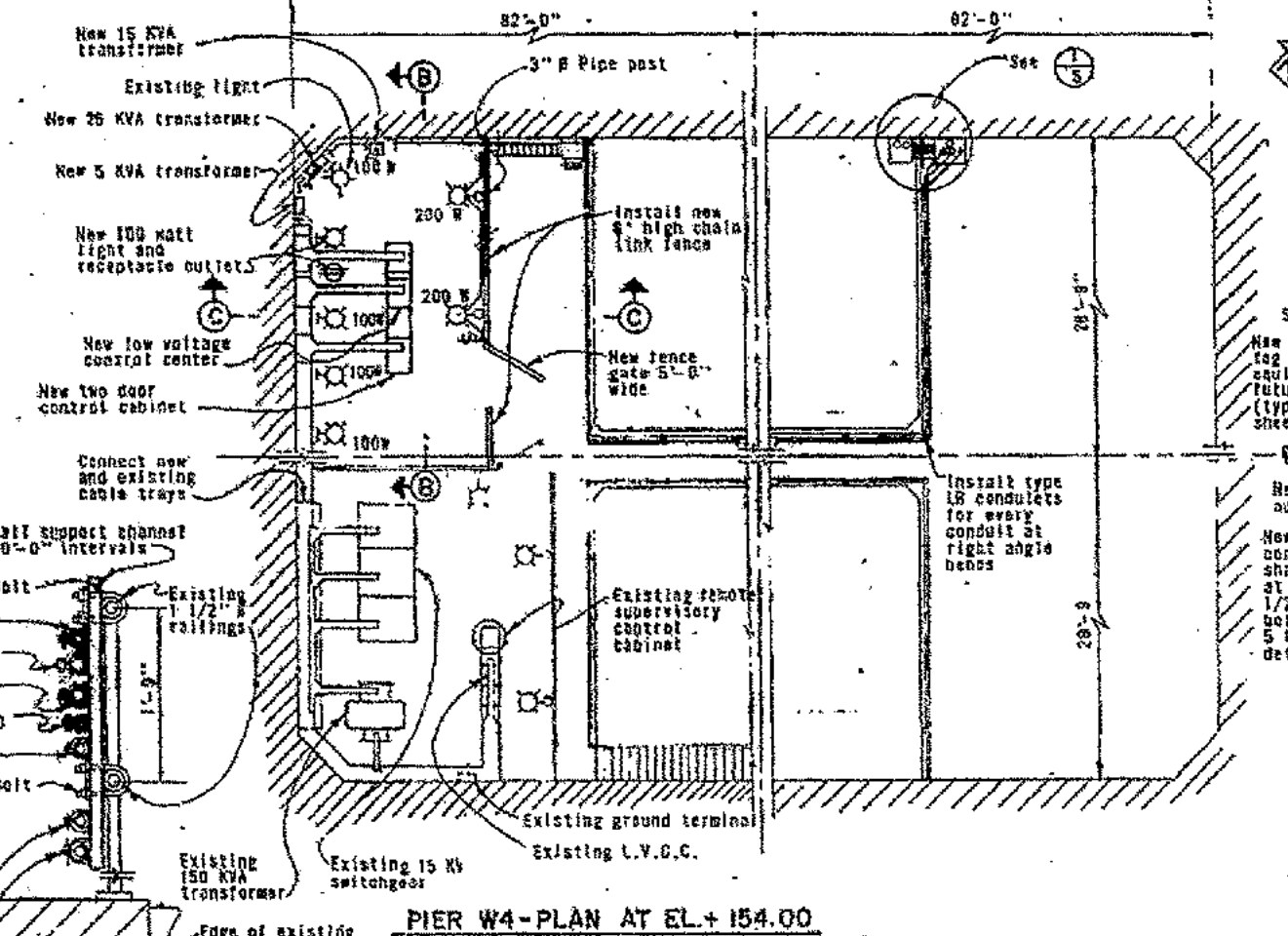
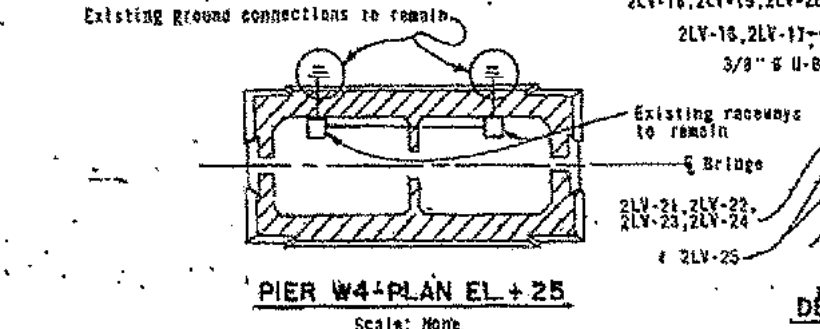
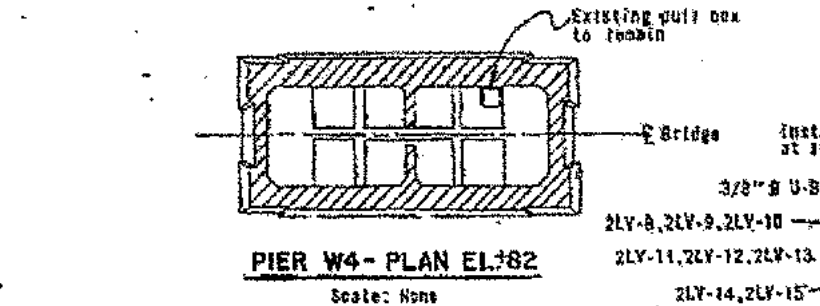
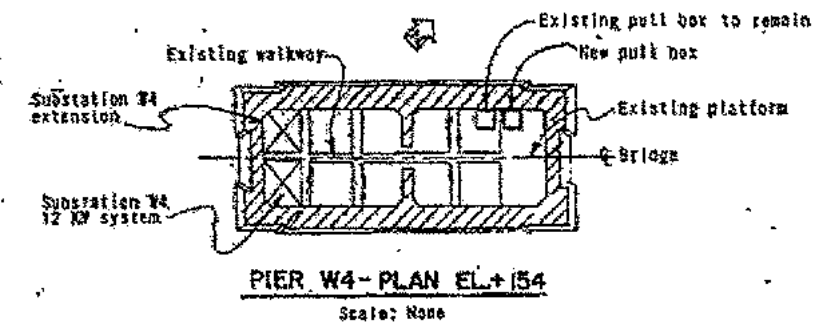
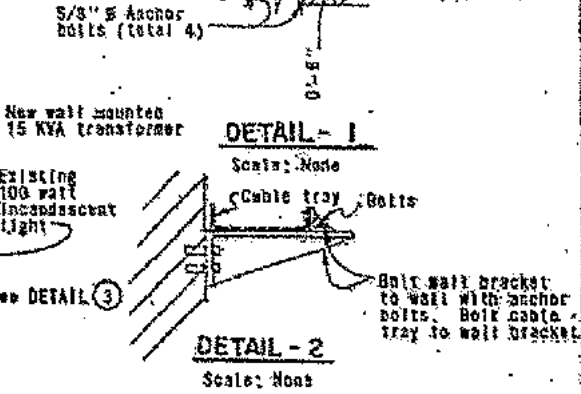
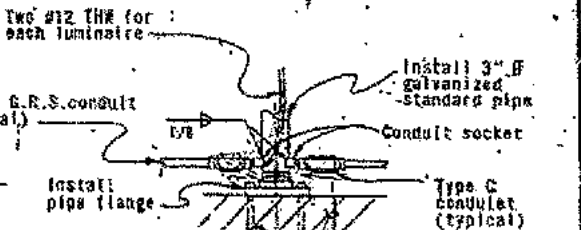
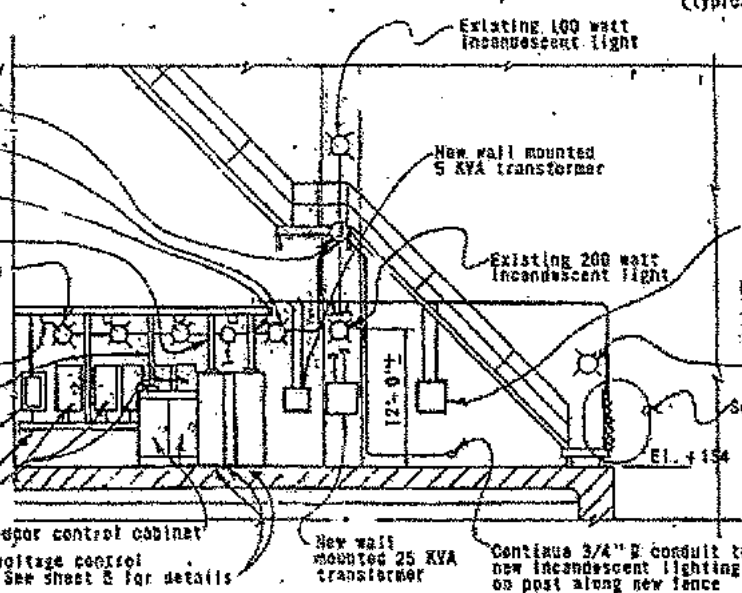
New lighting panel FS

New 4" x 4" x 24"-0" auxiliary gutter

New two door control cabinet

New low voltage control center. See sheet 5 for details

Five new wall mounted fog signal coding equipment for future fog signals. See sheet 5

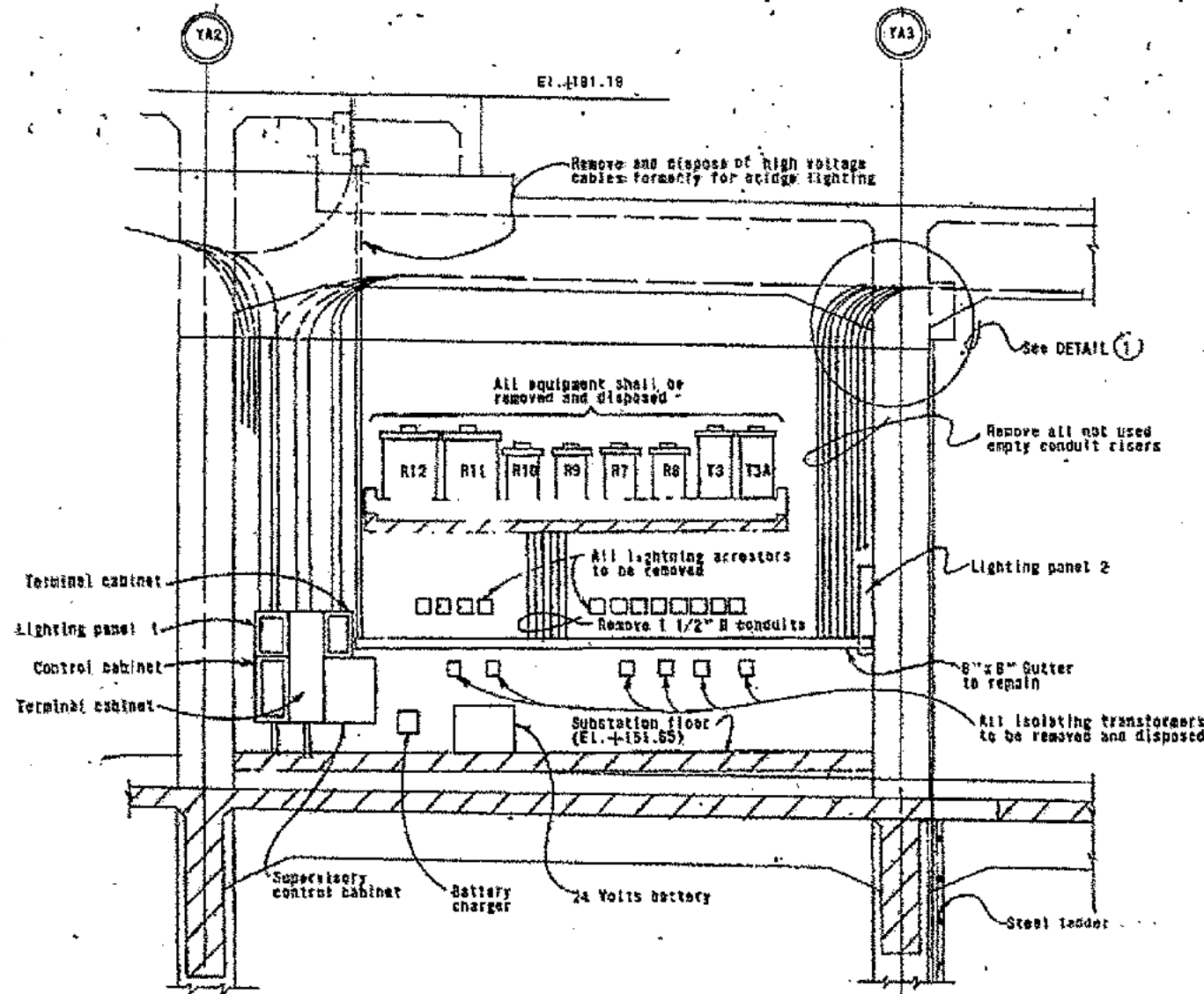


NOTES

1. For schematics, see sheet 5.
2. For Substation 2, see sheet 12.
3. For ground connections, see sheet 22

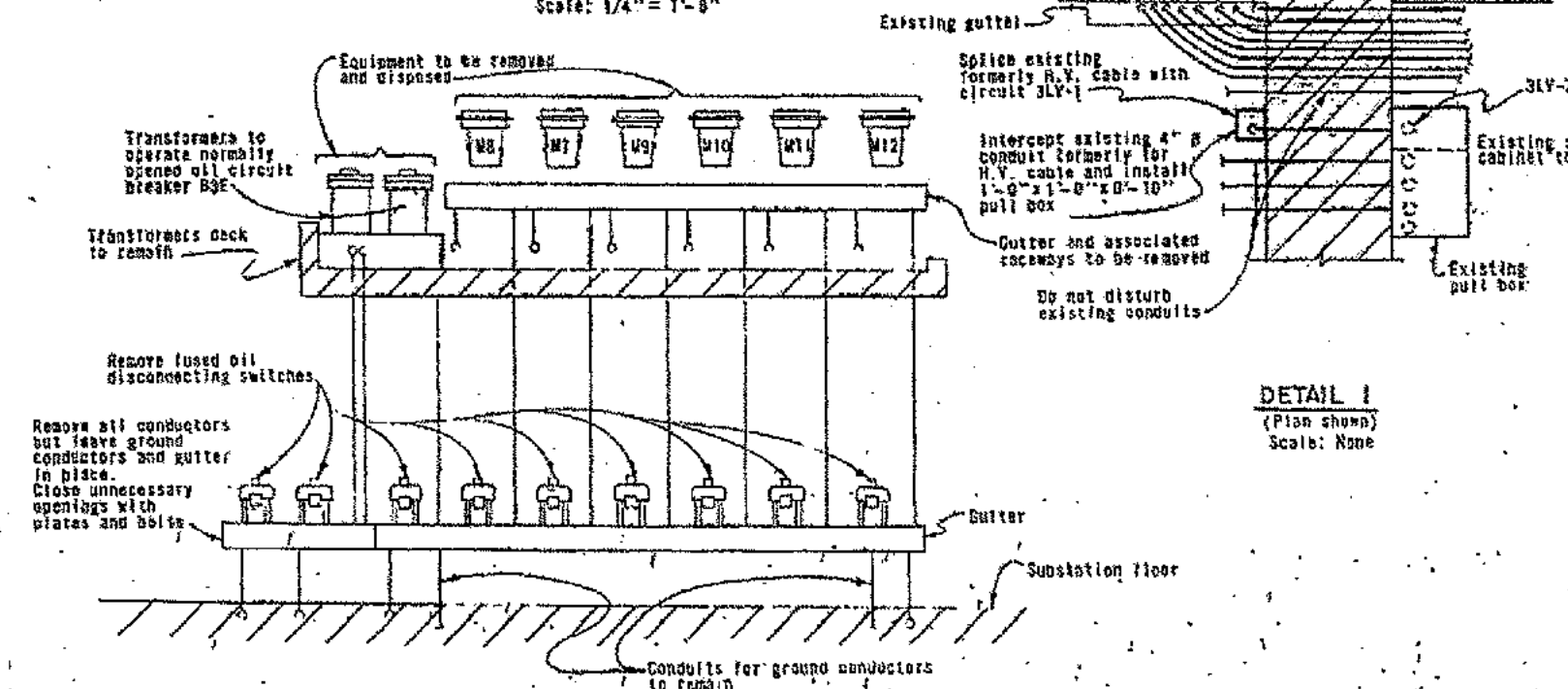
SCALE IN INCHES ON ORIGINAL

|  |                       |                                  |  |
|--|-----------------------|----------------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                       |                                  |  |
| DESIGN BY A. ADAMOFF   | CHECKED BY J. ADAMOFF | SAN FRANCISCO-OAKLAND BAY BRIDGE |  |
| DRAWN BY G. ADAMOFF  | CHECKED BY J. ADAMOFF | ELECTRICAL ALTERATIONS           |  |
| IN CHARGE OF DESIGN  |                       | SUBSTATION AT PIER W4-12 KV      |  |
| APPROVAL RECOMMENDED   |                       | AS NOTED                         |  |
| APPROVED DECEMBER 3, 1973  |                       | SHEET NO. 13                     |  |
| RAYMOND CHAN   |                       | C-44122-13                       |  |



EXISTING INSTALLATION AT NORTH WALL

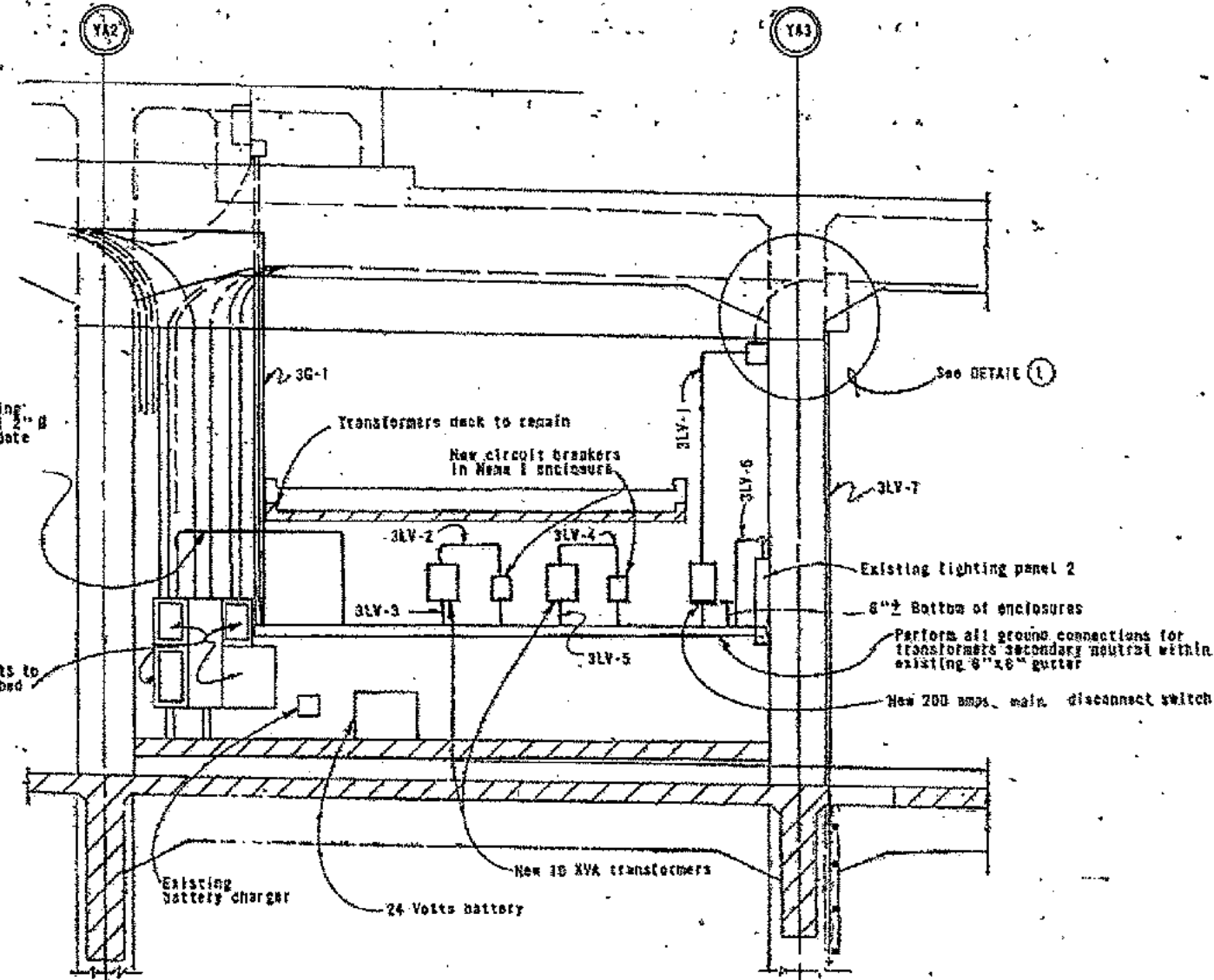
Scale: 1/4" = 1'-0"



EXISTING INSTALLATION AT SOUTH WALL

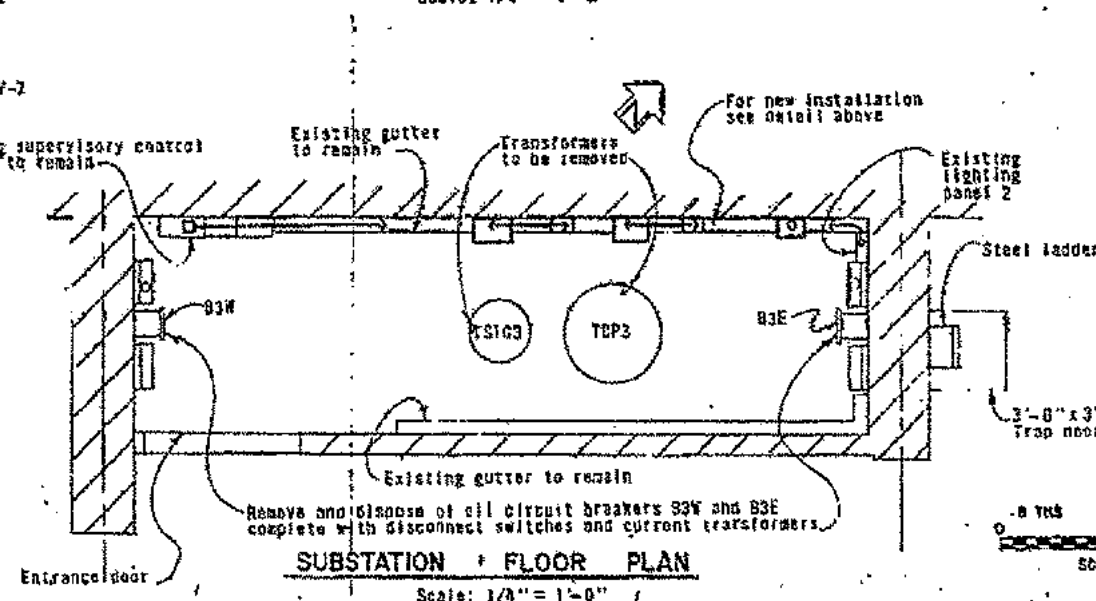
Scale: None

DETAIL 1  
(Plan shown)  
Scale: None



ALTERED INSTALLATION AT NORTH WALL

Scale: 1/4" = 1'-0"

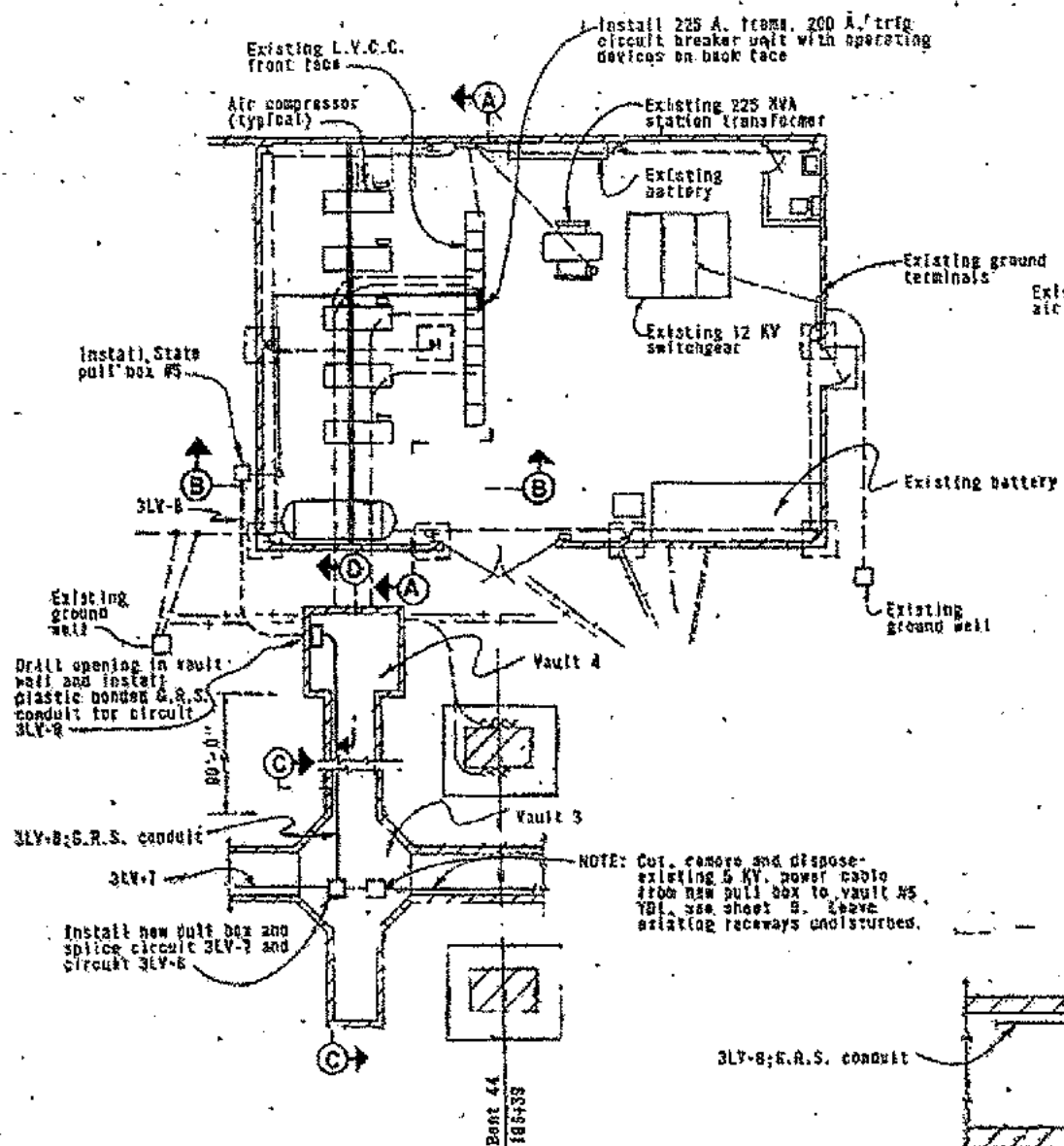


NOTES

1. Heavy lines indicate new work.
2. For schematic see sheet 3.
3. Plug up all remaining conduit stubs; use metal to metal connections.
4. For circuit schedule see sheet 3.

0 1 2 3 4  
SCALE IN INCHES ON ORIGINAL

|  |                         |   |  |
|--|-------------------------|---|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                         |   |  |
| DESIGN BY A. ADRIANO   | CHECKED BY J. J. J. J.  | SAN FRANCISCO-OAKLAND BAY BRIDGE ELECTRICAL ALTERATIONS |  |
| DRAWN BY J. J. J. J.   | APPROVED BY J. J. J. J. | SUBSTATION 3 ALTERATION                                 |  |
| IN CHARGE OF DESIGN  | APPROVAL RECOMMENDED    | AS NOTED  |  |
| Raymond Chan   | Harold S. S.            | 14  |  |
| APPROVED DECEMBER 3, 1973  |                         | C-34122-14  |  |



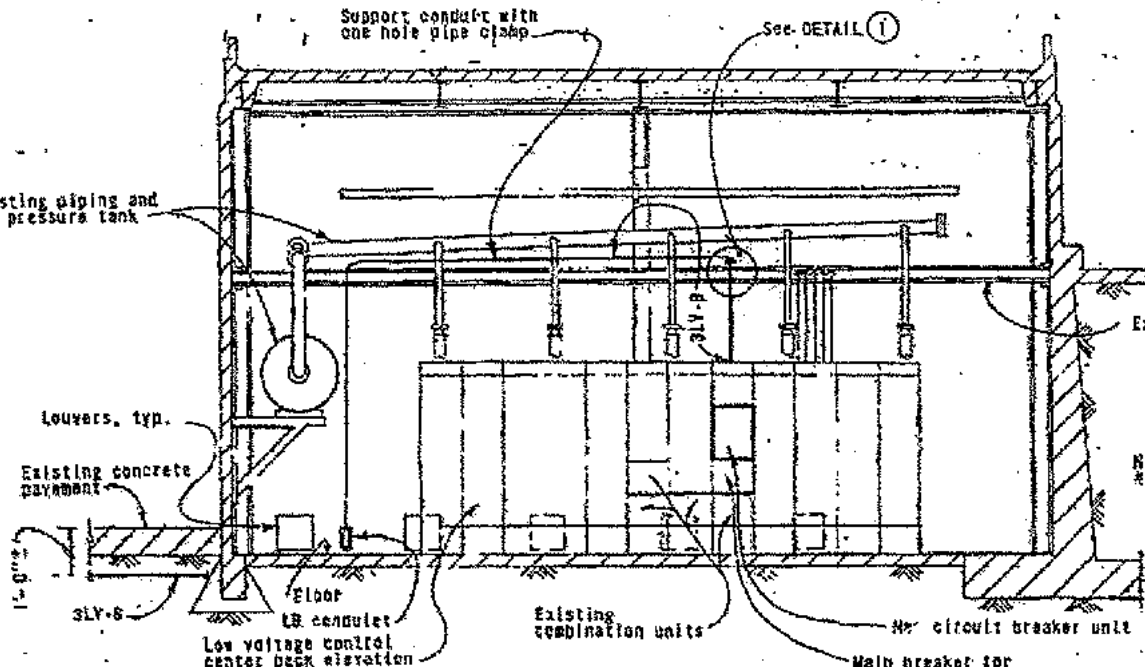
**PLAN-YERBA BUENA ISLAND SUBSTATION AND VAULTS**

Scale: 1/8" = 1'-0"

- a. Conductor #4/0 AWG, 19 strand copper
- b. 0.20" Rubber insulation
- c. Semi conducting tape
- d. #1/0 AWG stranded copper ground wire
- e. Jute fill
- f. Reinforced rubber sheath and tape
- g. 0.10" Jute and compound
- h. Heavy cotton braid

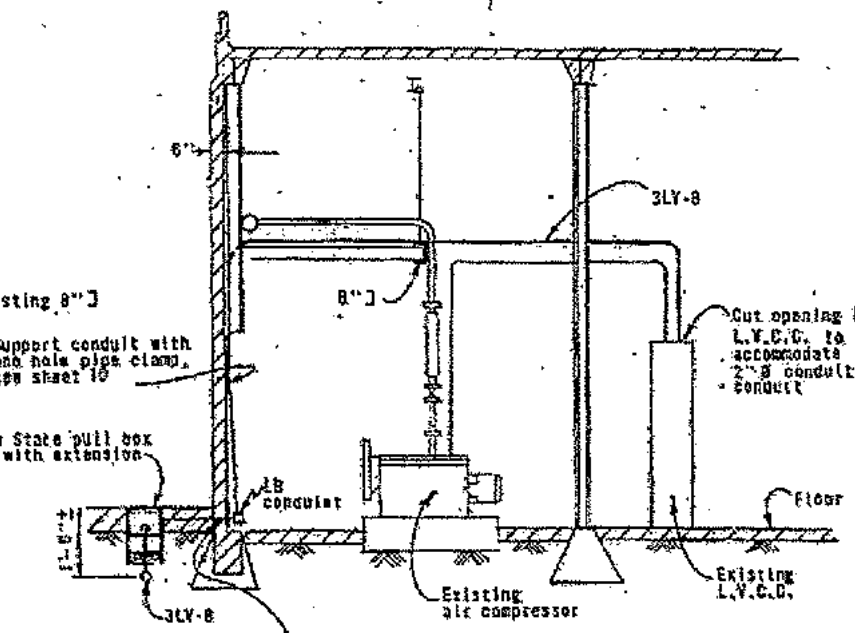
**EXISTING 5 KV CABLE**

(To be utilized for circuit 3LV-7; for location, see sheet 9)



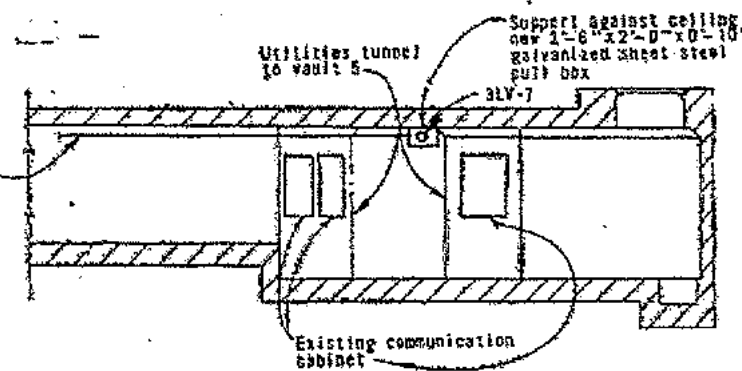
**SECTION A-A**

Scale: 1/4" = 1'-0"



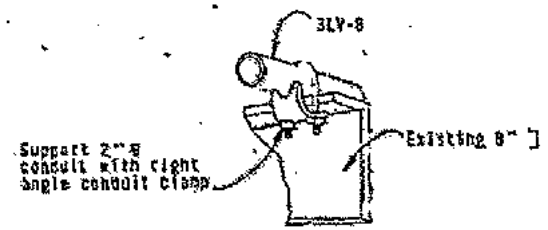
**SECTION B-B**

Scale: 1/4" = 1'-0"



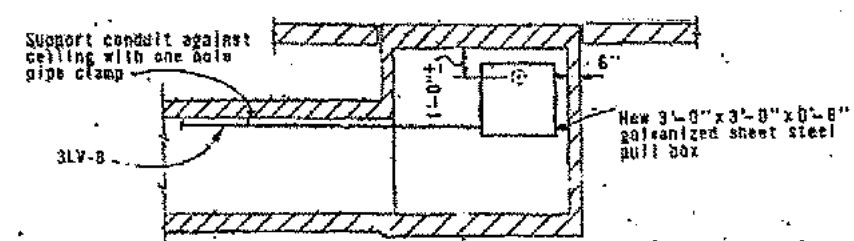
**SECTION C-C**

Scale: 1/4" = 1'-0"



**DETAIL 1**

Scale: None



**SECTION D-D**

Scale: 1/4" = 1'-0"

**NOTES**

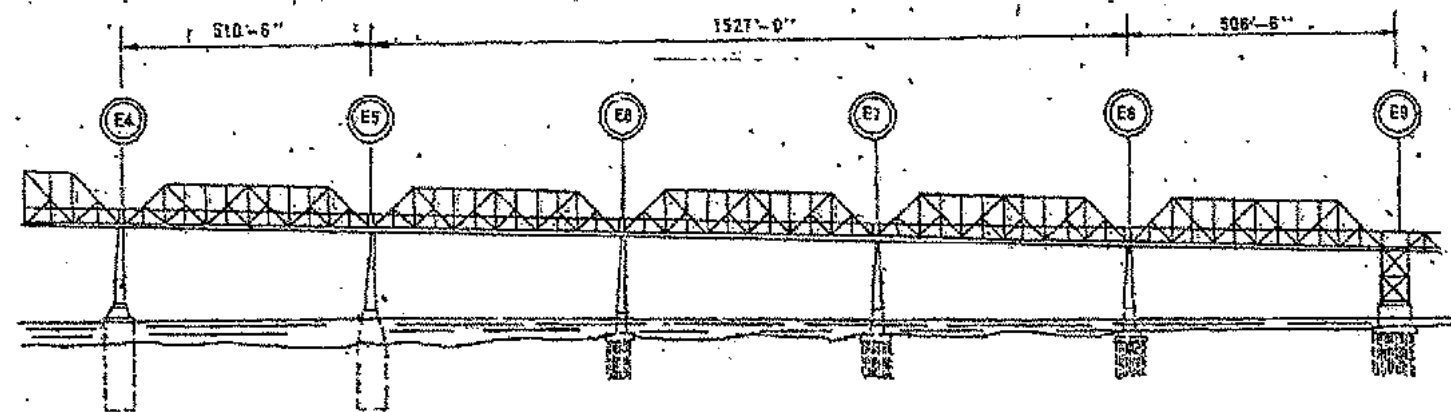
1. Heavy lines indicate new work.
2. For schematics, see sheet 7.
3. For circuit schedule, see sheet 1.



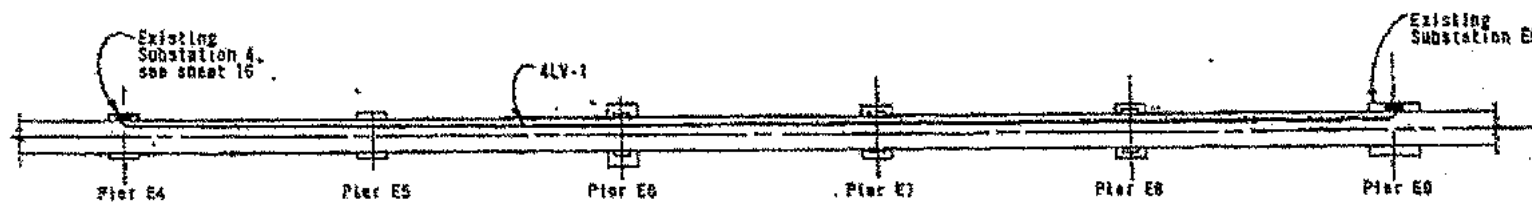
|  |                                  |                                   |    |
|--|----------------------------------|-----------------------------------|----|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                                  |                                   |    |
| DESIGNED BY: A. KARALOFF   | CHECKED BY: [Signature]          | APPROVED DECEMBER 3, 1973         |    |
| PREPARED BY: [Signature]   | IN CHARGE OF DESIGN: [Signature] | APPROVAL RECOMMENDED: [Signature] |    |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                                  | ELECTRICAL ALTERATIONS            |    |
| SUBSTATION Y.B.I. - 12 KV  |                                  | SCALE: AS NOTED                   |    |
| MARK   | DATE                             | REVISION                          | BY |
| <div style="display: flex; justify-content: space-between;"> <span>15</span> <span>C-44122-15</span> </div>          |                                  |                                   |    |



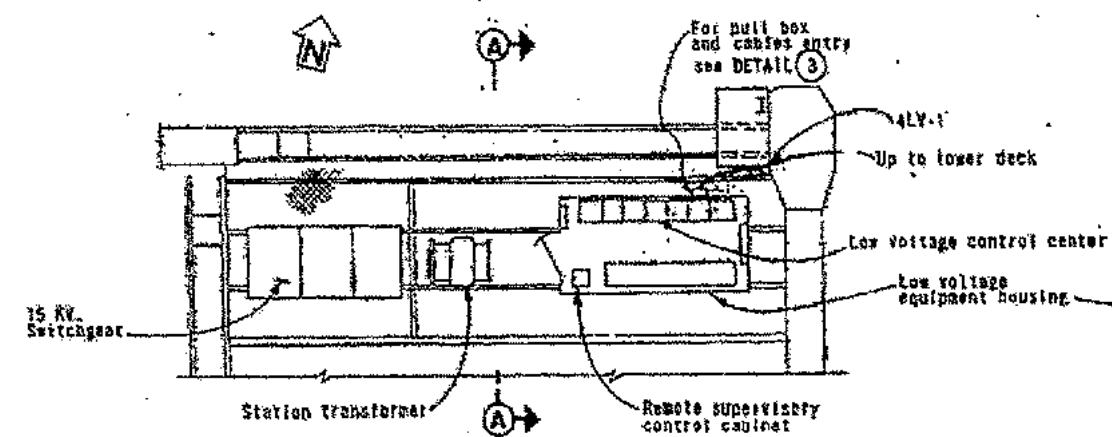
|  |                                     |  |                             |
|--|-------------------------------------|--|-----------------------------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                                     |  |                             |
| DESIGN BY <u>A. ASPENHOF</u>   | CHECKED BY <u>E. J. [illegible]</u> | SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS<br>SUBSTATION 4, ALTERATION |                             |
| DESIGN BY <u>C. J. [illegible]</u>   | CHECKED BY <u>E. J. [illegible]</u> |  |                             |
| APPROVED BY <u>[illegible]</u>   | ESTIMATED BY <u>[illegible]</u>     |  |                             |
| IN CHARGE OF DESIGN<br><u>Raymond Chan</u>   |                                     | APPROVED <u>DECEMBER 3, 1973</u><br><u>Charles [illegible]</u>                         |                             |
| APPROVAL RECOMMENDED BY<br><u>[illegible]</u>  |                                     | SCALE<br>AS NOTED  | SHEET NO.<br>16             |
| DRAWN BY <u>[illegible]</u>  |                                     | DESIGNED BY<br>1   | DEVELOPED BY<br>C-4-4122-16 |



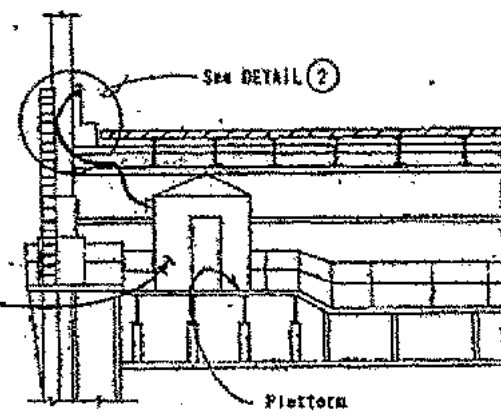
**BRIDGE ELEVATION EAST BAY**  
Scale: 1" = 200'-0"



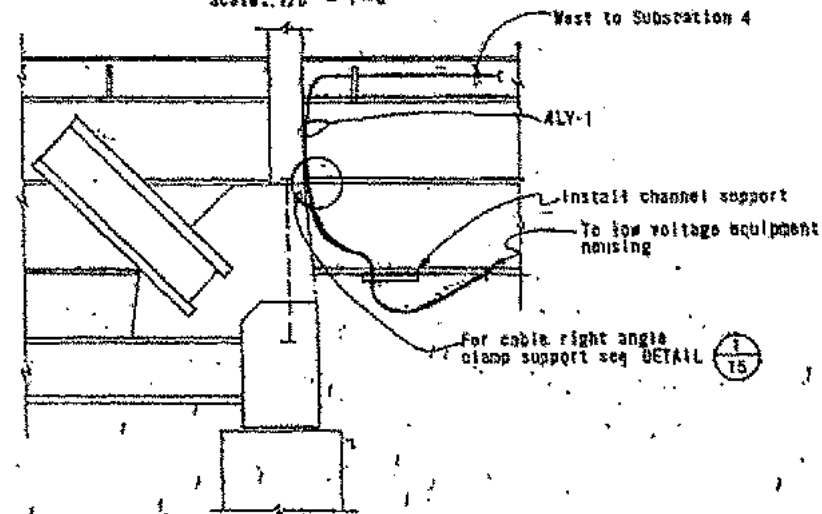
**PLAN - BRIDGE LOWER DECK**  
Scale: 1" = 200'-0"



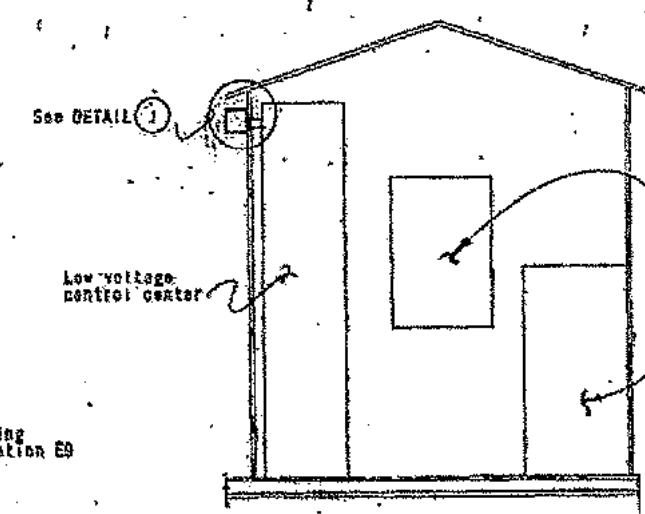
**PLAN - EXISTING INSTALLATION AT SUBSTATION E9**  
Scale: 1/8" = 1'-0"



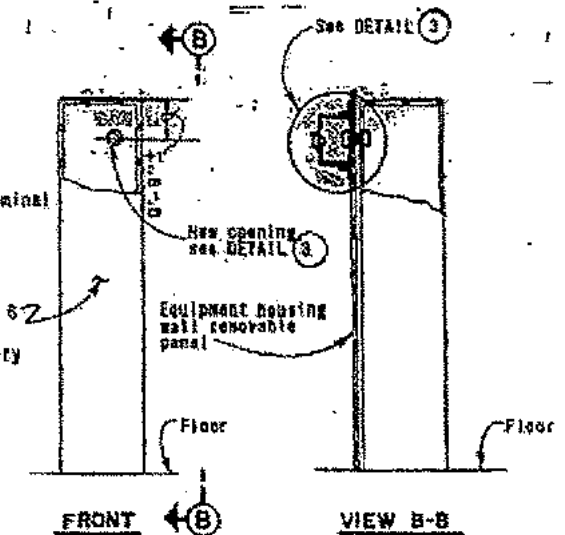
**SECTION A-A**  
Scale: 1/8" = 1'-0"



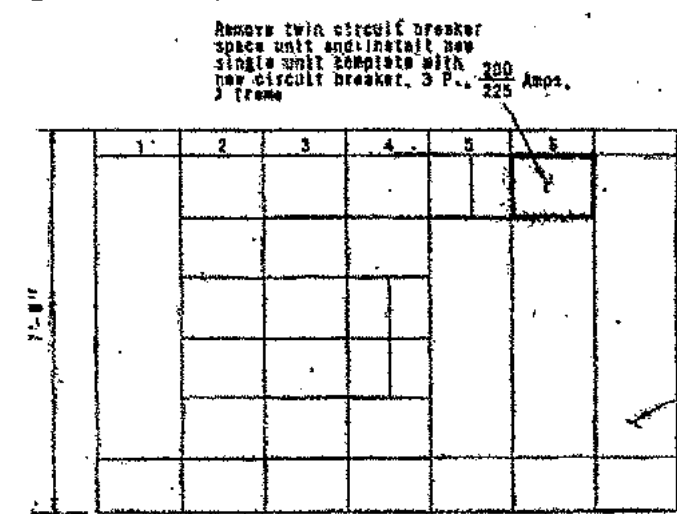
**DETAIL 2**  
Scale: 1/2" = 1'-0"



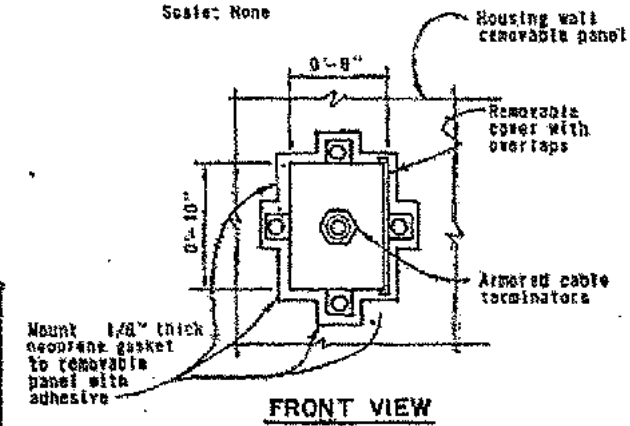
**EXISTING EQUIPMENT HOUSING**  
Scale: 1/2" = 1'-0"



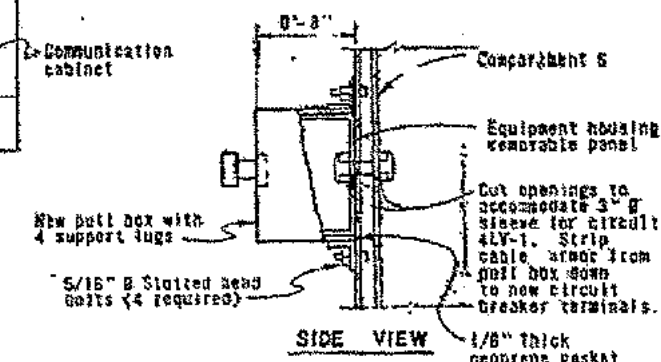
**DETAIL 1**  
Scale: None



**EXISTING L.V. CONTROL CENTER**  
Scale: 1/2" = 1'-0"



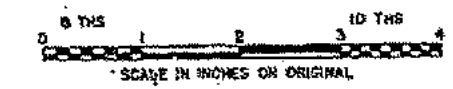
**FRONT VIEW**



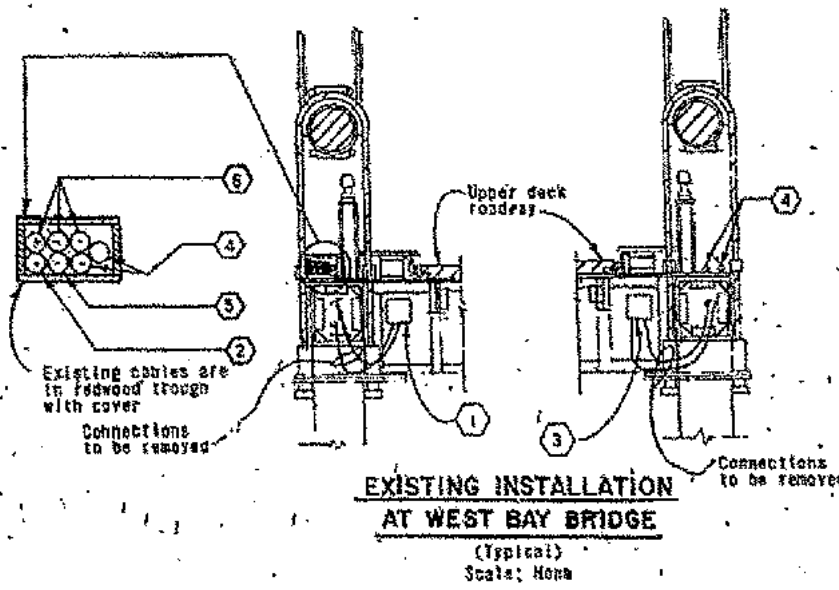
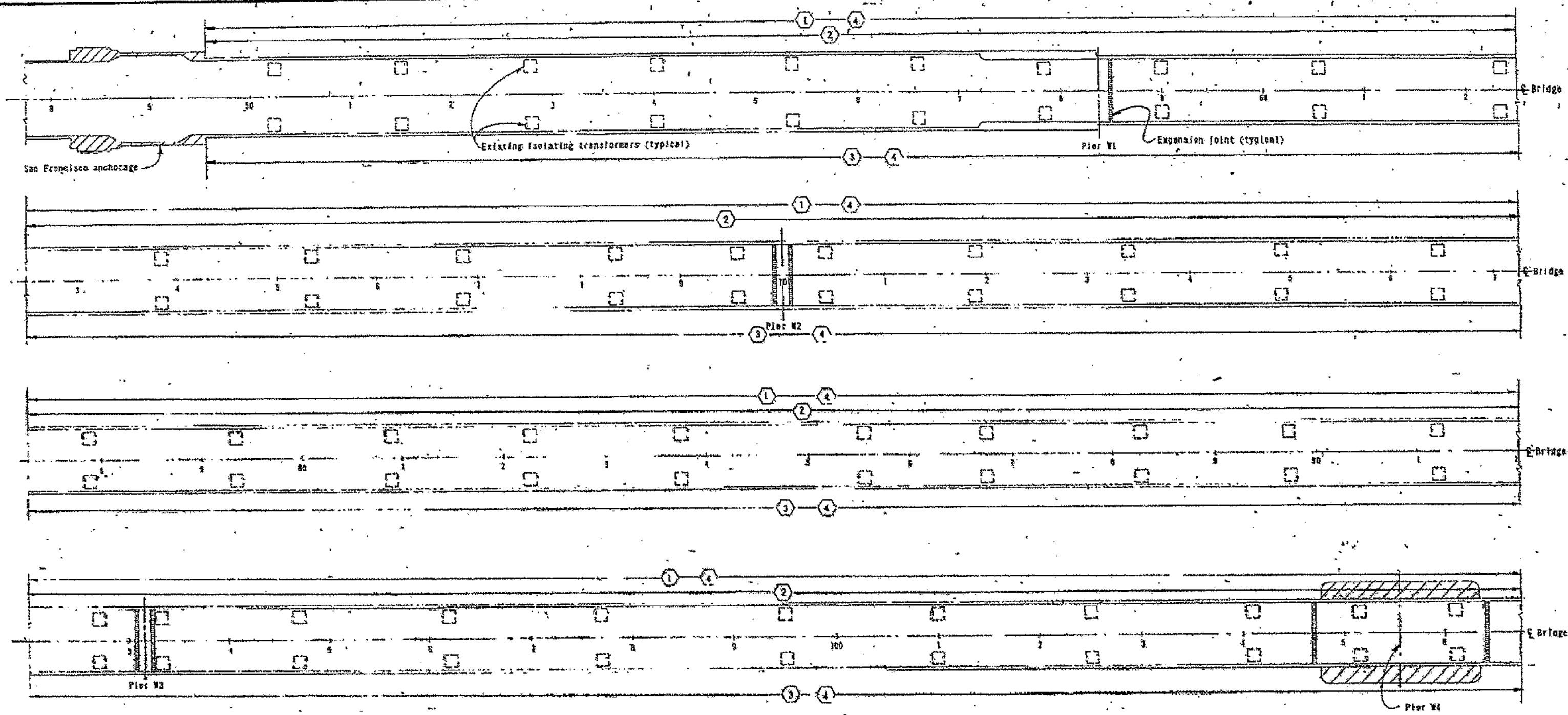
**SIDE VIEW**  
**DETAIL 3**

**NOTES**

1. Heavy lines indicate new work.
2. For schematic see sheet 8.
3. For circuit schedule see sheet 8.



|  |                            |                                  |              |
|--|----------------------------|----------------------------------|--------------|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                            |                                  |              |
| DESIGN BY: A. J. ARACILLO, CIVIL ENGINEER  | APPROVED: DECEMBER 3, 1973 | SAN FRANCISCO-OAKLAND BAY BRIDGE |              |
| BY: RAYMOND CHEN   |                            | ELECTRICAL ALTERATIONS           |              |
| APPROVAL: [Signature]  |                            | SUBSTATION E9-12 KV              |              |
| DATE: [Blank]  | BY: [Blank]                | SCALE: AS NOTED                  | SHEET NO. 17 |



**WORK NOTES** (for sheets 18, 19, and 20)

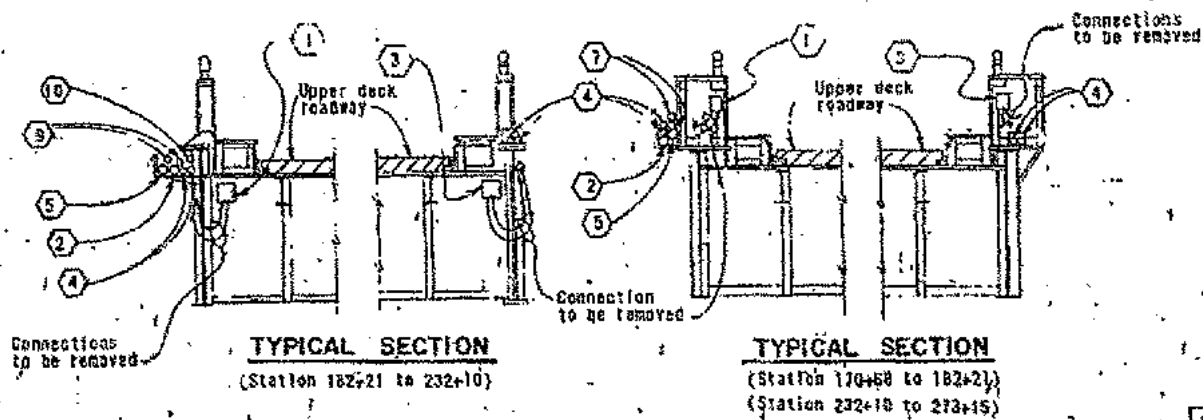
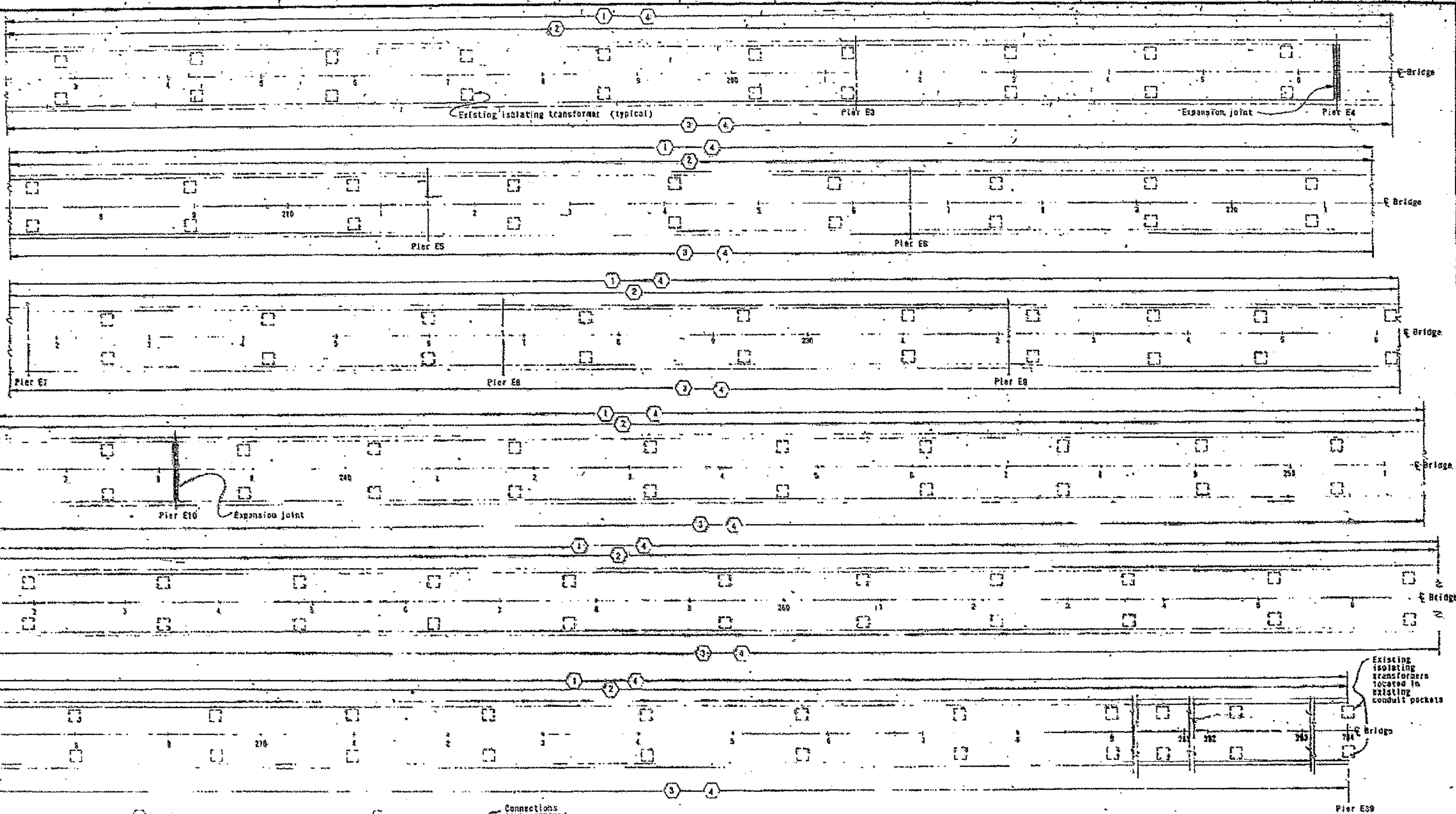
- ① Remove and dispose of existing isolating transformers on North Side.
- ② 5 KV. power cable to remain.
- ③ Remove and dispose of existing isolating transformers on South Side.
- ④ Remove and dispose of 7/8" AWG single conductor cables, formerly used for 5 KV series bridge lighting.

- ⑤ Do not disturb control cable.
- ⑥ Do not disturb miscellaneous navigation aid cables.
- ⑦ Abandon remnants of 5 KV. series bridge lighting cables, North side.
- ⑧ Abandon remnants of 5 KV. series bridge lighting cables, South side.
- ⑨ Do not disturb 25 conductor cable and power cable.
- ⑩ Do not disturb 50 tw. pair communication cable.

|  |                        |                                  |    |
|--|------------------------|----------------------------------|----|
| STATE OF CALIFORNIA — HIGHWAYS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                        |                                  |    |
| DESIGN BY A. ABLEHOFF  | CHECKED BY [Signature] | APPROVED DECEMBER 3, 1973        |    |
| DRAWN BY [Signature]   | CHECKED BY [Signature] |                                  |    |
| IN CHARGE OF DESIGN [Signature]  |                        | APPROVAL RECOMMENDED [Signature] |    |
| [Signature]  |                        | [Signature]                      |    |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                        | ELECTRICAL ALTERATIONS           |    |
| UPPER DECK PLAN 48+00-106+75   |                        | SCALE 1" = 50'                   |    |
| MARK   | DATE                   | REVISION                         | BY |

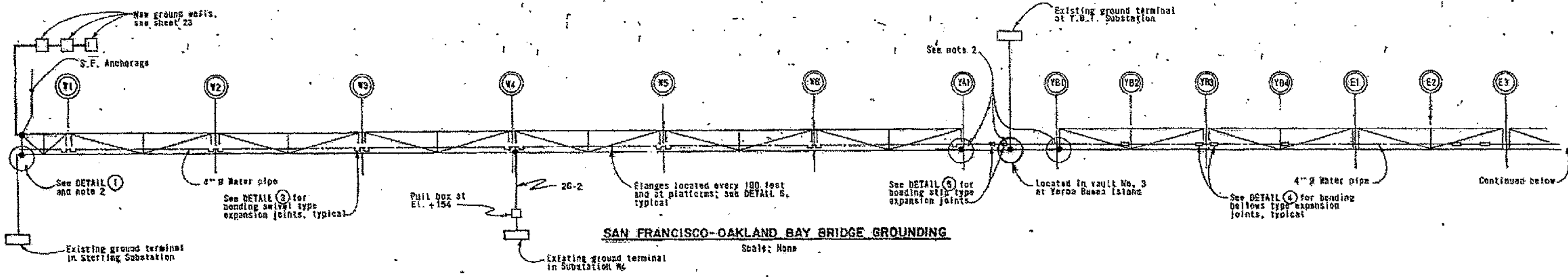




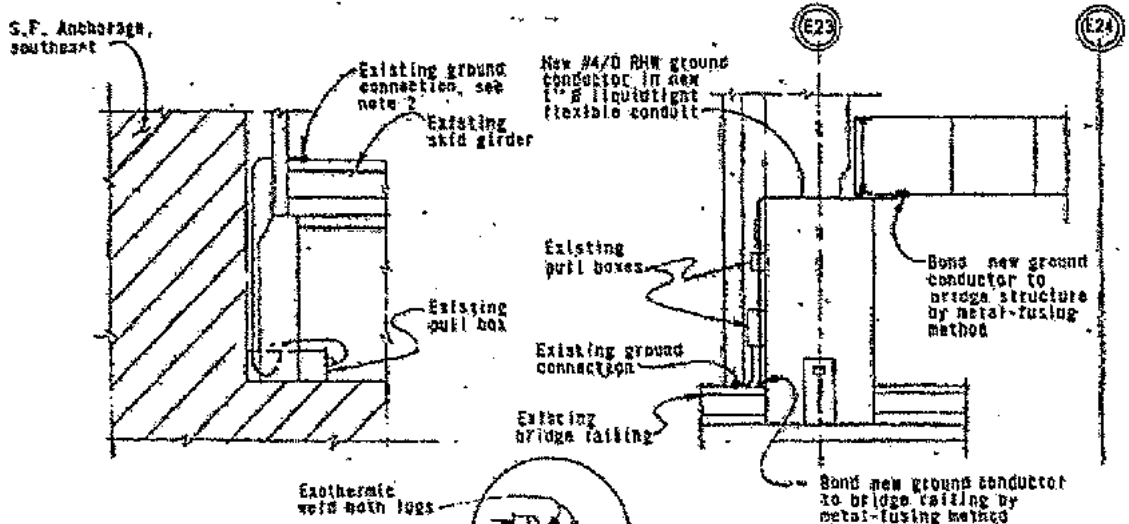


**NOTES**  
1. For work notes, see sheet 18.

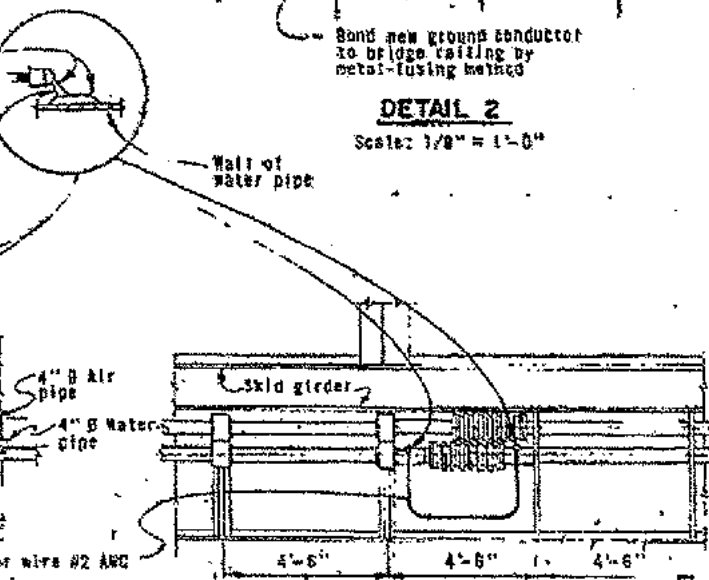
|  |                      |                               |          |
|--|----------------------|-------------------------------|----------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                      |                               |          |
| DESIGN   | BY A. ABRAMOFF       | CHECKED                       | APPROVED |
| DRAWN  | BY J. J. J. J.       | CHECKED                       | APPROVED |
| SPECIFICATIONS   | BY J. J. J. J.       | CHECKED                       | APPROVED |
| BY CHARGE OF DESIGN  | APPROVAL RECOMMENDED |                               |          |
| APPROVED DECEMBER 3, 1973  |                      | APPROVED DECEMBER 3, 1973     |          |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                      | ELECTRICAL ALTERATIONS        |          |
| UPPER DECK PLAN 192+25-281+30  |                      | UPPER DECK PLAN 192+25-281+30 |          |
| SCALE  | 1" = 50'             | SHEET NO.                     | 20       |
| DRAWING NO.  |                      | C-44122-20                    |          |



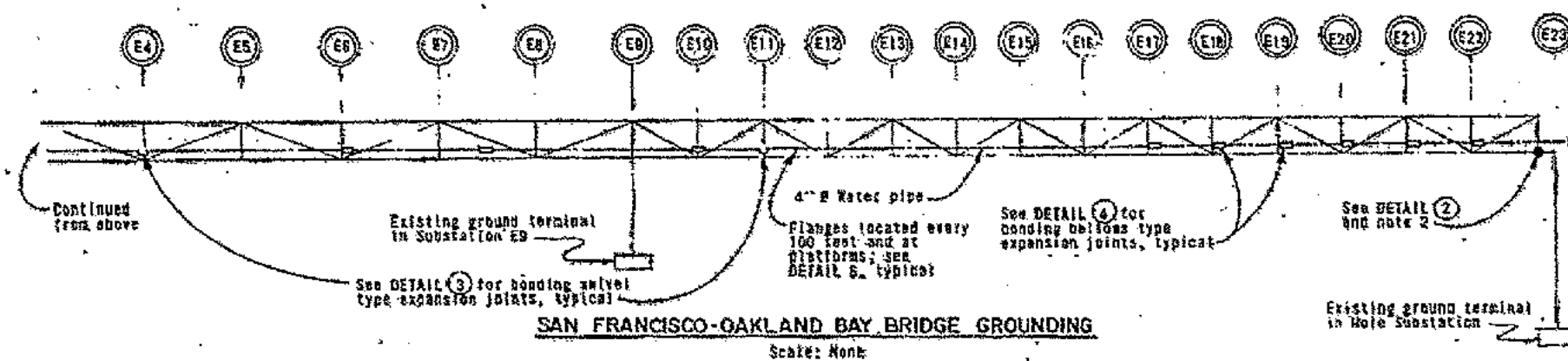
**SAN FRANCISCO-OAKLAND BAY BRIDGE GROUNDING**  
Scale: None



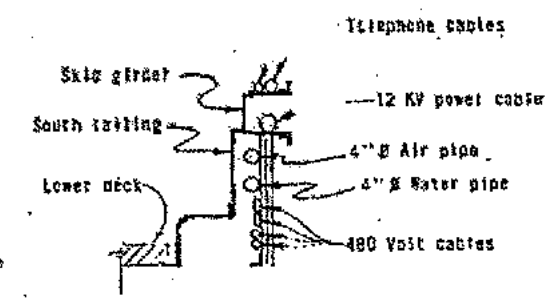
**DETAIL 1**  
Scale: 1/8" = 1'-0"



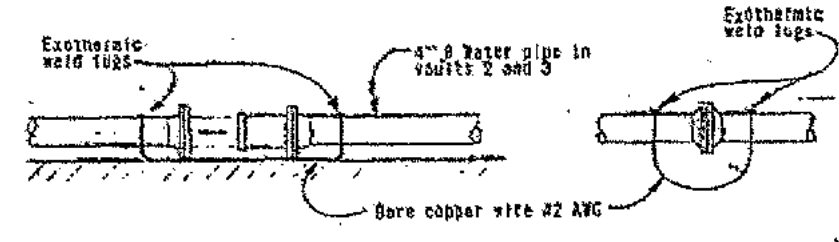
**DETAIL 2**  
Scale: 1/8" = 1'-0"



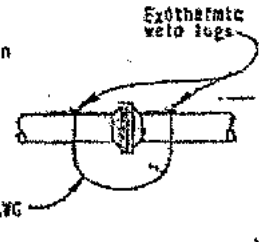
**SAN FRANCISCO-OAKLAND BAY BRIDGE GROUNDING**  
Scale: None



**TYPICAL SECTION  
SOUTH LOWER DECK RAILING**  
Scale: None

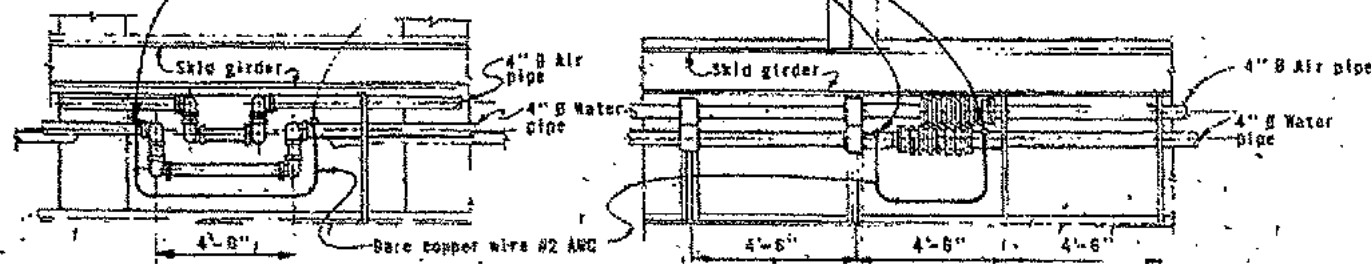
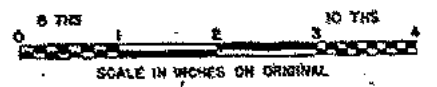


**DETAIL 5**  
Scale: None

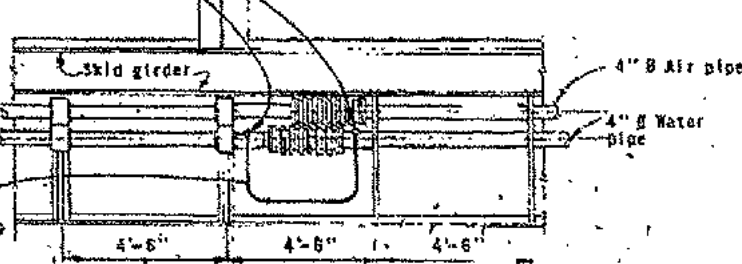


**DETAIL 6**  
Scale: None

- NOTES**
1. Heavy lines indicate new work.
  2. Contractor shall check existing ground connections and restore connections where necessary as approved by the Engineer.
  3. Grounding around water pipe isolation valves shall be similar to DETAIL 6.

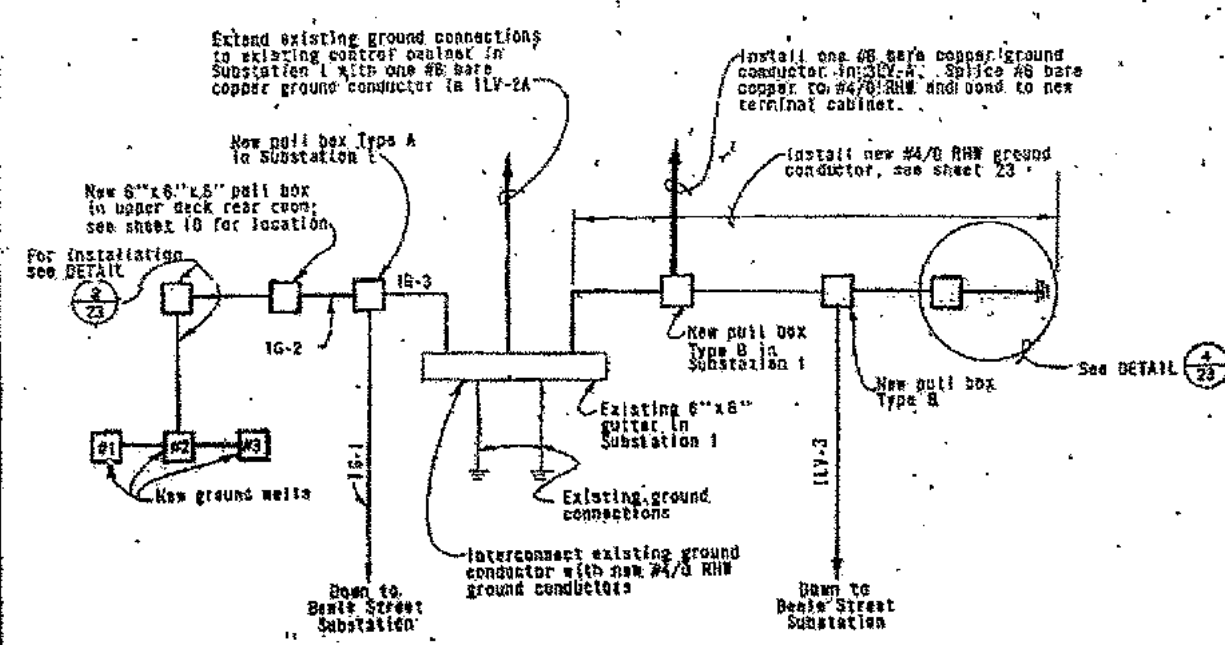


**DETAIL 3**  
Scale: None

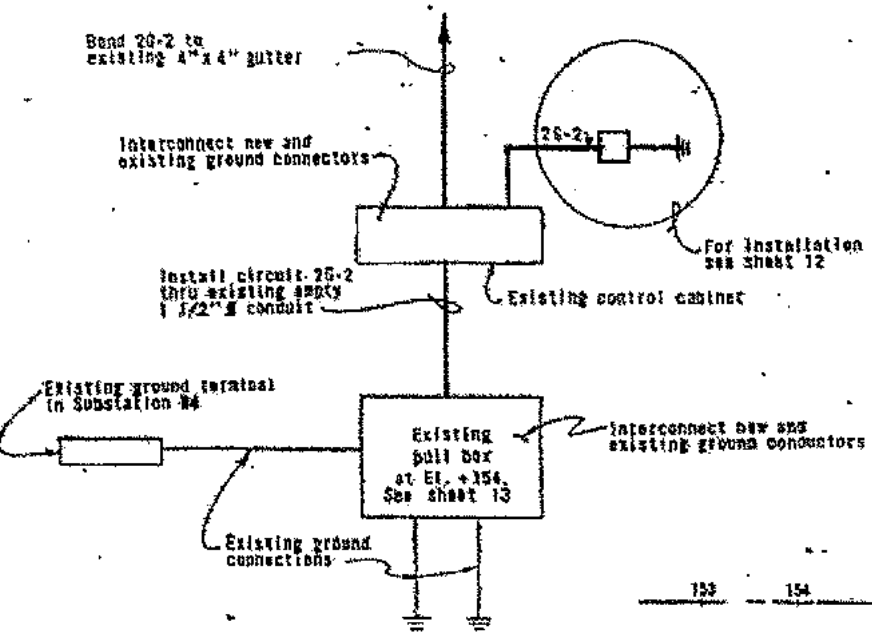


**DETAIL 4**  
Scale: None

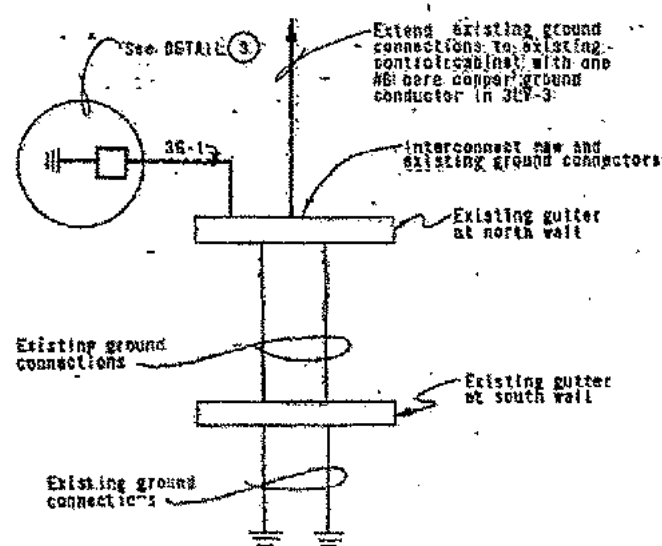
|  |                           |                                 |  |
|--|---------------------------|---------------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                           |                                 |  |
| DESIGN<br>BY A. HARRISON   | CHECKED<br>BY J. HARRISON | APPROVED<br>DECEMBER 3, 1973    |  |
| DRAWN<br>BY J. HARRISON  |                           | APPROVED<br>BY J. HARRISON      |  |
| IN CHARGE OF DESIGN<br>BY J. HARRISON  |                           | APPROVED<br>BY J. HARRISON      |  |
| APPROVAL RECOMMENDED<br>BY J. HARRISON   |                           | APPROVED<br>BY J. HARRISON      |  |
| DATE<br>12/3/73  |                           | PROJECT NO.<br>C-44122-21       |  |
| DIVISION<br>1  |                           | SHEET NO.<br>21                 |  |
| PROJECT<br>SAN FRANCISCO-OAKLAND BAY BRIDGE  |                           | TITLE<br>ELECTRICAL ALTERATIONS |  |
| GROUND SYSTEM DETAILS I  |                           | SCALE<br>AS NOTED               |  |



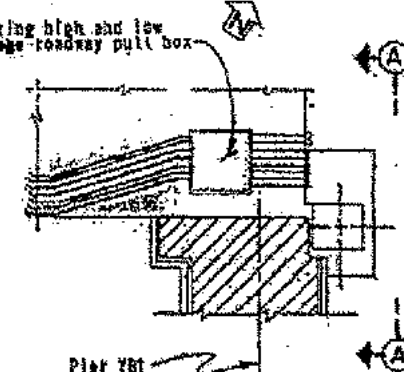
**ALTERED GROUND SYSTEM 1**  
(For Substation 1 and Substation Beale Street)



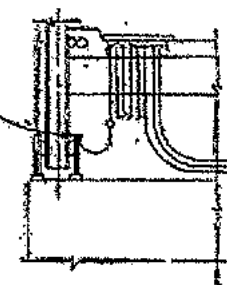
**ALTERED GROUND SYSTEM 2**  
(For Substation 2)



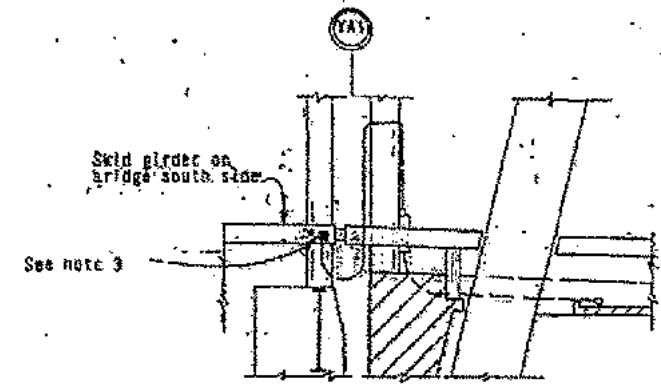
**ALTERED GROUND SYSTEM 3**  
(For Substation 3)



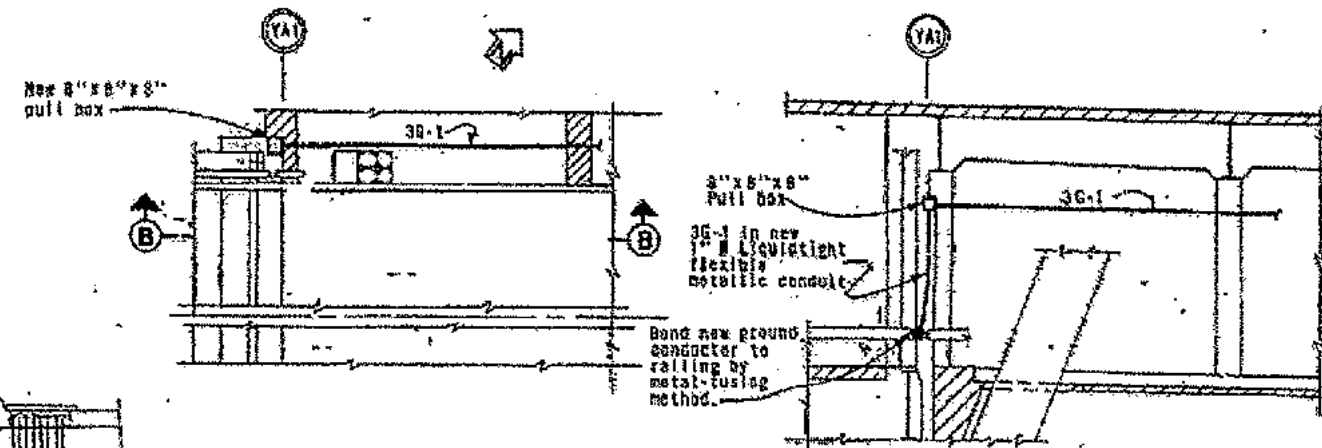
**PLAN SOUTH**  
Scale: 1/8" = 1'-0"



**VIEW A-A**  
Scale: 1/8" = 1'-0"



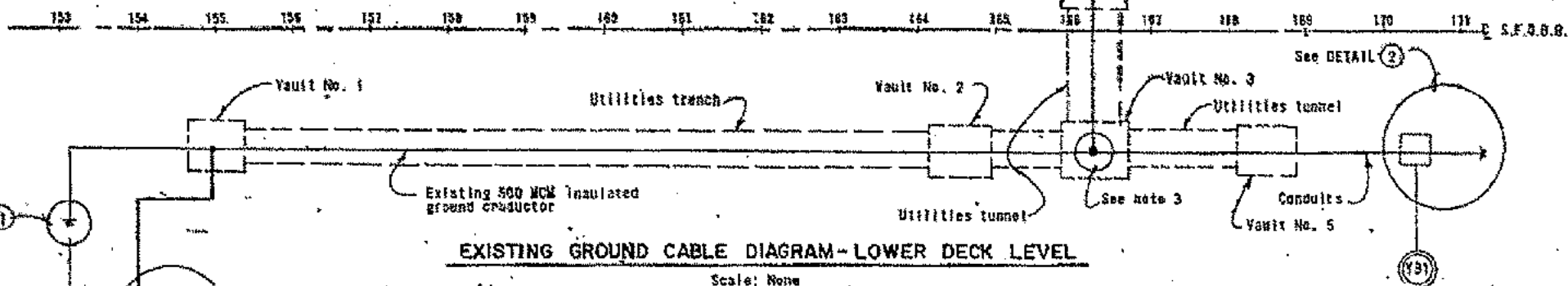
**DETAIL 1**  
Scale: 1/8" = 1'-0"



**PLAN - NORTH**  
Scale: 1/8" = 1'-0"

**SECTION - B-B**  
Scale: 1/8" = 1'-0"

**DETAIL 3**

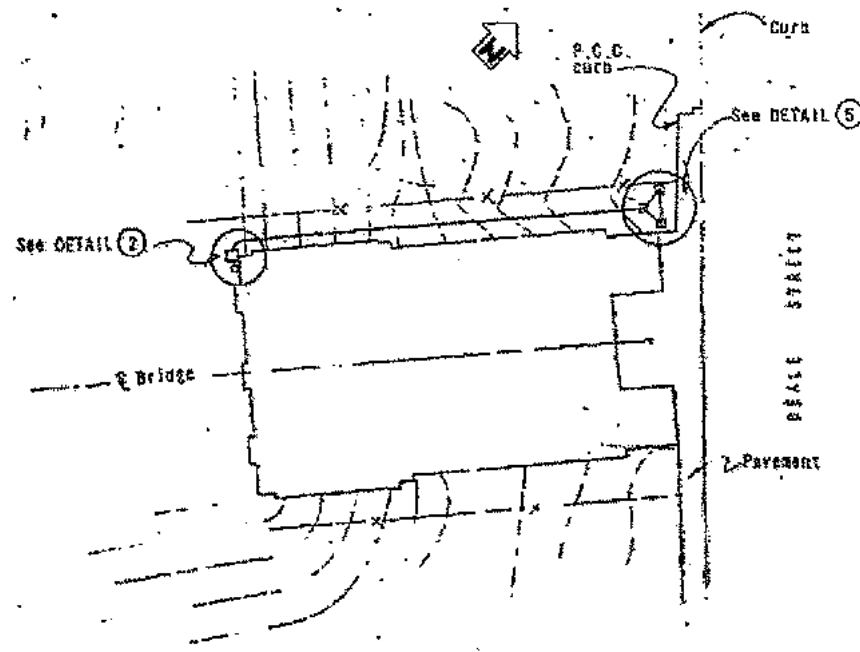


**EXISTING GROUND CABLE DIAGRAM - LOWER DECK LEVEL**  
Scale: None

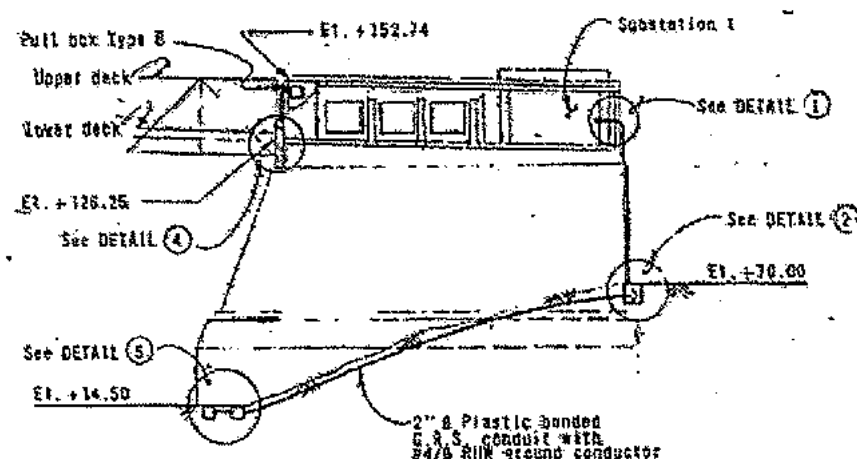


- NOTES**
1. Heavy lines indicate new work.
  2. For equipment physical location see sheets 10, 11, 12, 14 and 15.
  3. Contractor shall check existing ground connections and restore connections where necessary as directed by the Engineer.
  4. For circuit schedule see sheets 5, 7 and 11.

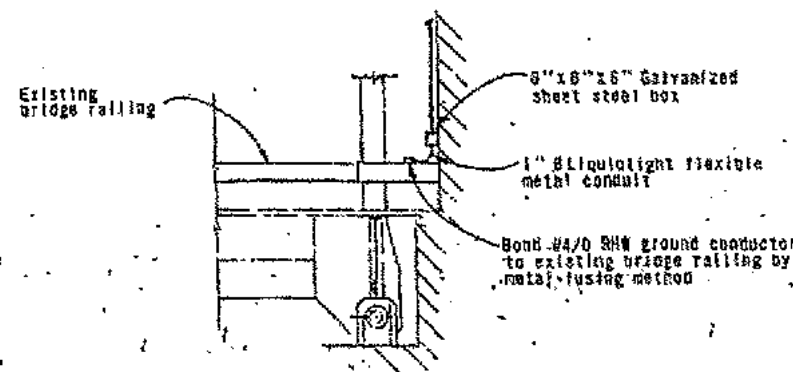
|  |                         |                                  |             |
|--|-------------------------|----------------------------------|-------------|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                         |                                  |             |
| DESIGN BY: A. ABRAMOFF   | CHECKED BY: [Signature] | APPROVED: DECEMBER 3, 1973       |             |
| DRAWN BY: [Signature]  | CHECKED BY: [Signature] | SAN FRANCISCO-OAKLAND BAY BRIDGE |             |
| APPROVED BY: [Signature]   | CHECKED BY: [Signature] | ELECTRICAL ALTERATIONS           |             |
| APPROVAL RECOMMENDED BY: [Signature]   |                         | GROUND SYSTEM DETAILS 2          |             |
| DATE: [Blank]  | REVISION: [Blank]       | SCALE: AS NOTED                  | FIG. NO. 22 |
| BY: [Signature]  |                         | DRAWING NO. C-44122-12           |             |



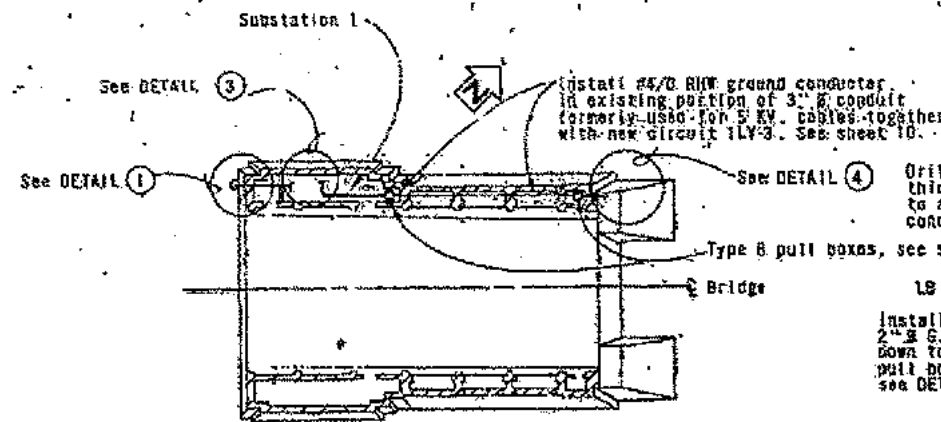
**PLAN-S.F. ANCHORAGE**  
Scale: 1" = 40'



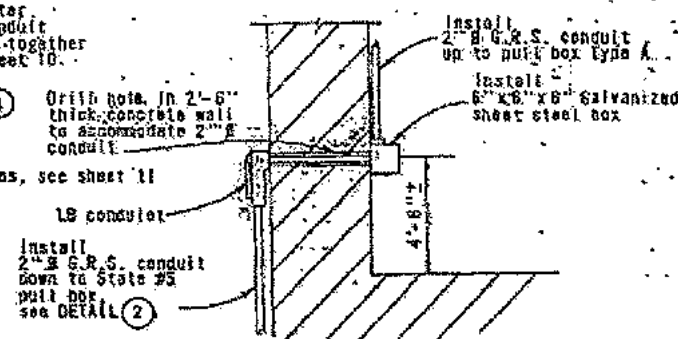
**NORTH ELEVATION-S.F. ANCHORAGE**  
Scale: 1" = 40'



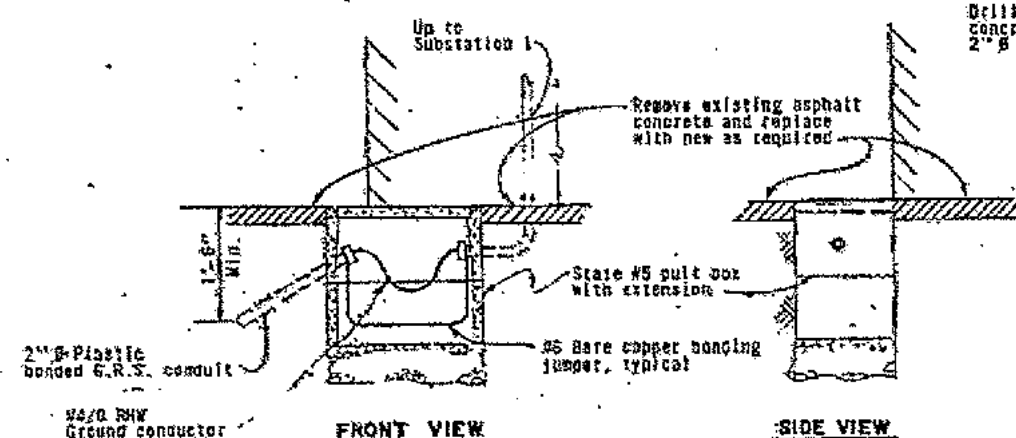
**DETAIL 4**  
Scale: None



**PLAN-LOWER DECK**  
San Francisco - Anchorage  
Scale: 1" = 40'



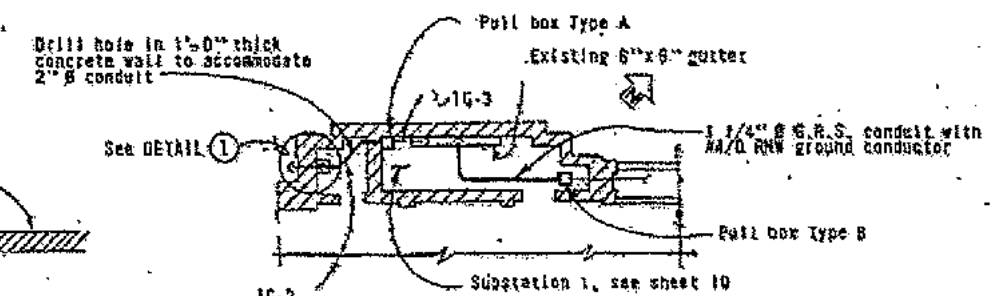
**DETAIL 1**  
Scale: None



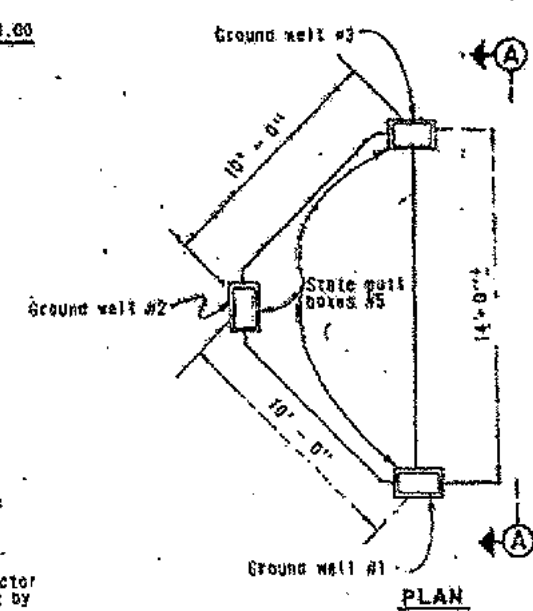
**FRONT VIEW**

**SIDE VIEW**

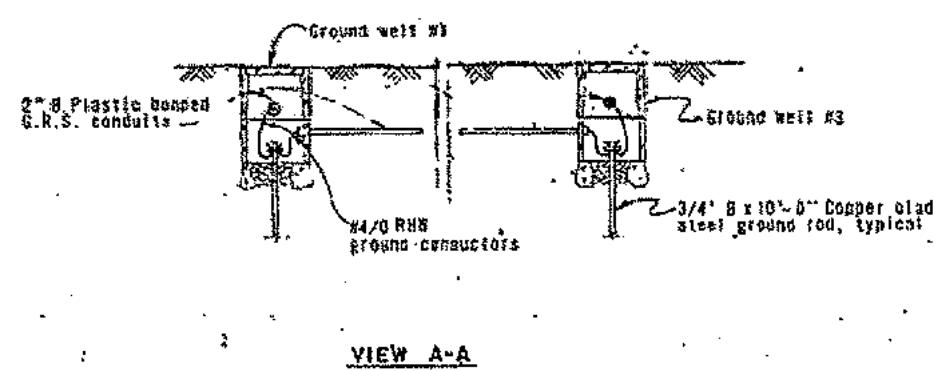
**DETAIL 2**  
Scale: None



**DETAIL 3**  
Scale: None



**PLAN**



**VIEW A-A**

**DETAIL 5**  
Scale: None

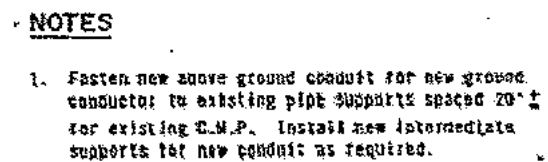
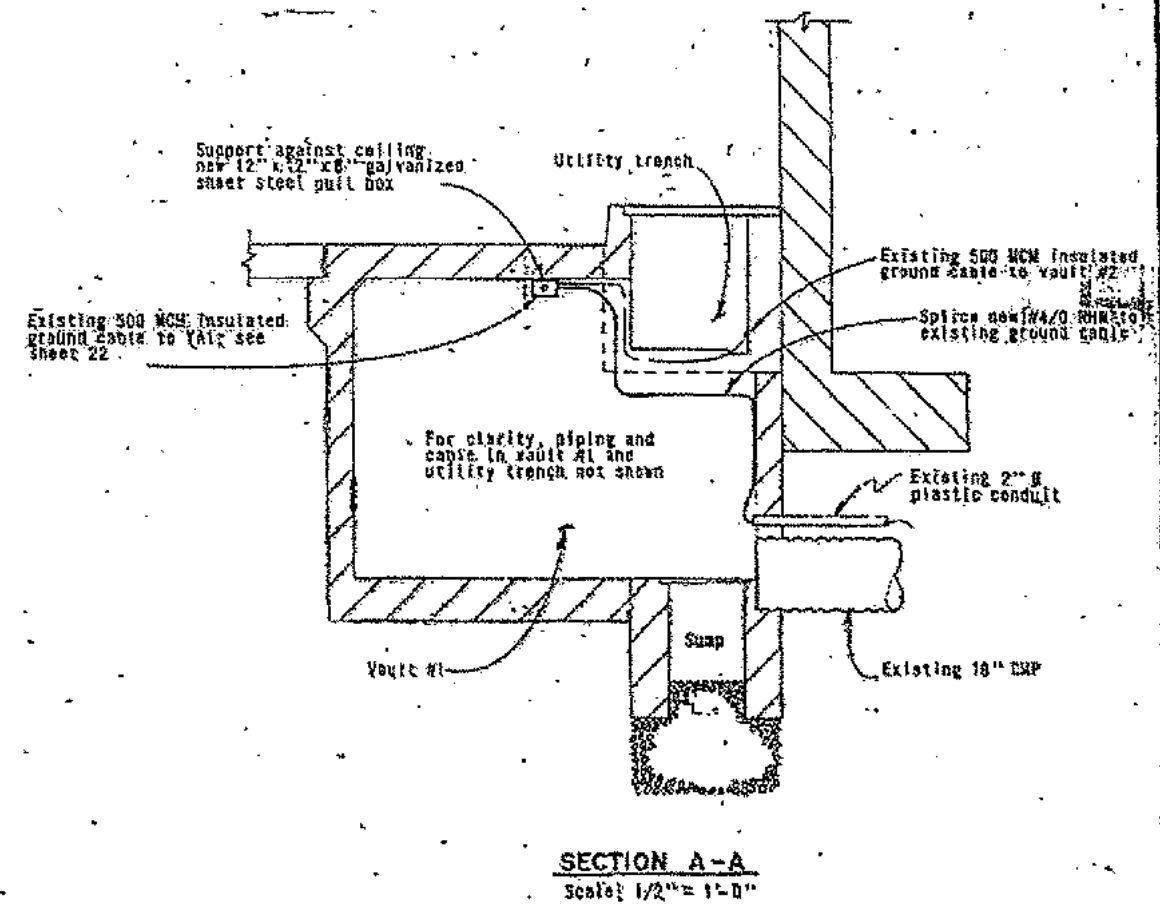
**NOTES**

1. For circuit schedule see sheet 11.

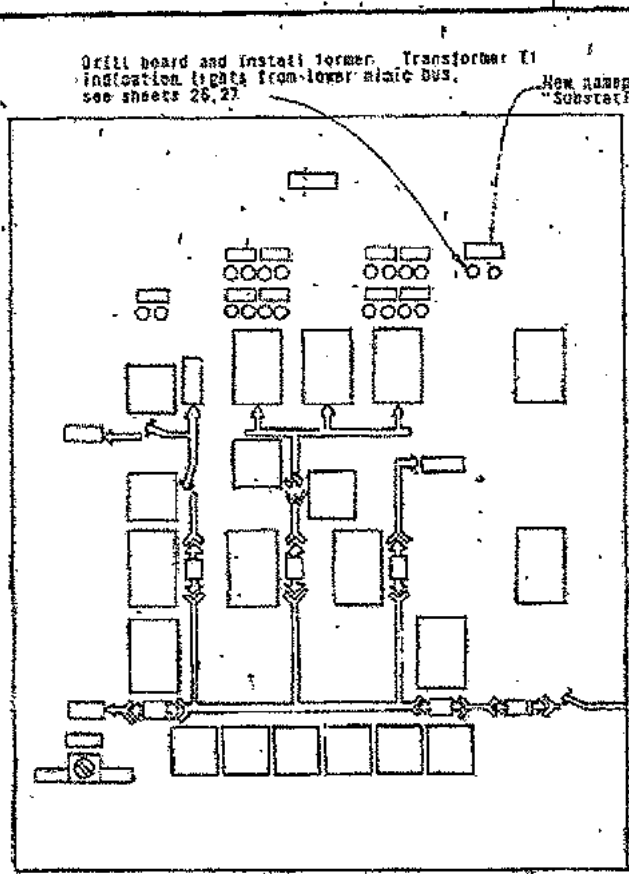


|  |                             |  |                 |
|--|-----------------------------|--|-----------------|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                             |  |                 |
| DESIGNER<br>W.A. ABRAHAMOFF  | CHECKED<br>C.R. [Signature] | SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS |                 |
| IN CHARGE OF DESIGN<br>Raymond L. Chan   | APPROVED<br>[Signature]     |  |                 |
| APPROVAL RECOMMENDED<br>[Signature]  |                             | GROUND SYSTEM DETAILS 3                                    |                 |
| DATE<br>12/1/73  | REVISION<br>1               | SCALE<br>AS NOTED  | SHEET NO.<br>23 |

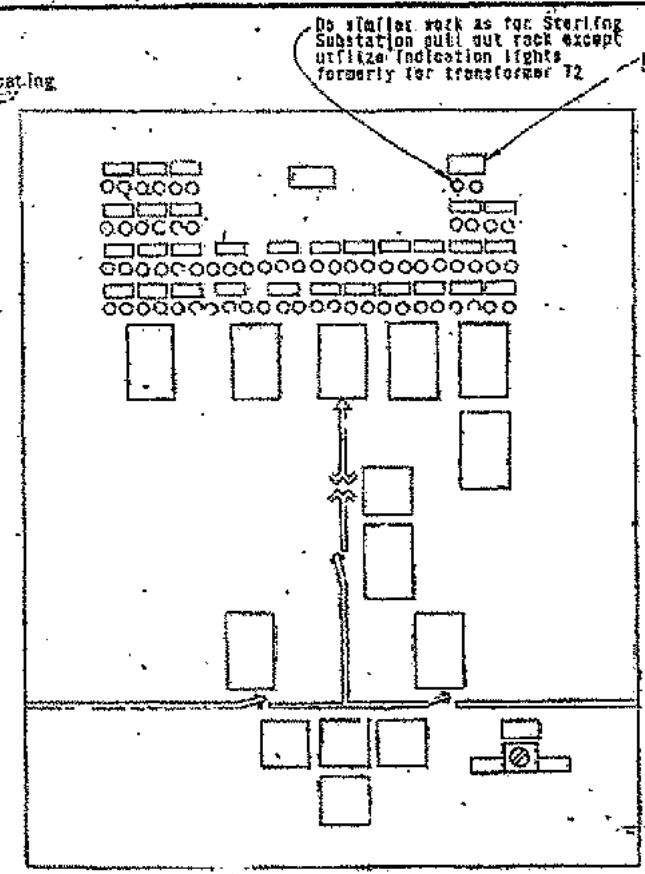




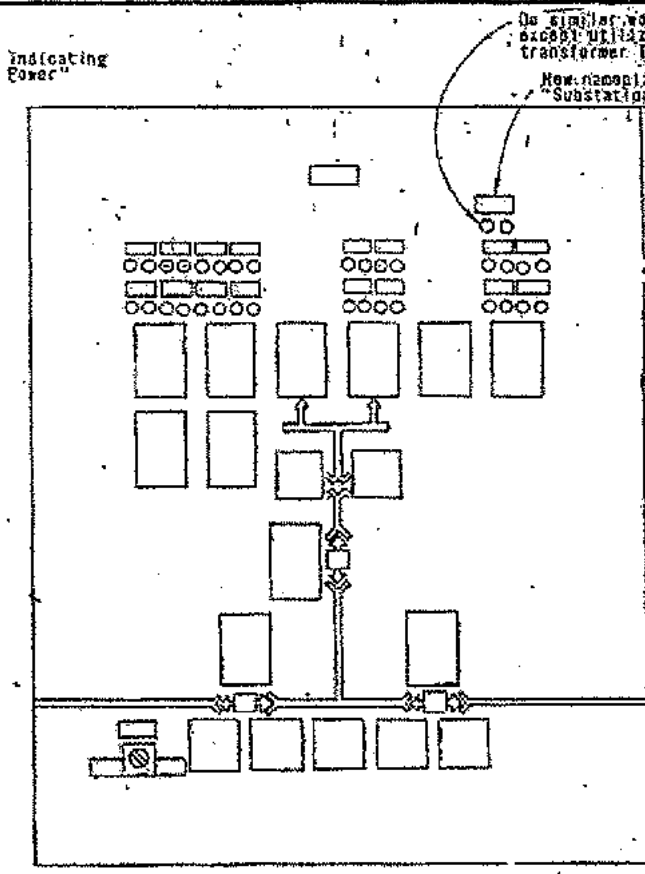
|  |                            |                  |                      |
|--|----------------------------|------------------|----------------------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                            |                  |                      |
| DESIGN   | W. A. ARRAOFF              | DATE             | 11/1/73              |
| DRAWN  | BY <i>W. A. Arraoff</i>    | CHECKED          | <i>W. A. Arraoff</i> |
| EXPLANATION  | TOLL BRIDGE ADMINISTRATION |                  |                      |
| IN CHARGE OF DESIGN  | <i>Raymond Chan</i>        |                  |                      |
| APPROVAL/RECOMMENDATION  | <i>James L. ...</i>        |                  |                      |
| APPROVED   |                            | DECEMBER 3, 1973 |                      |
| K. ...   |                            | K. ...           |                      |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                            |                  |                      |
| ELECTRICAL ALTERATIONS   |                            |                  |                      |
| GROUND SYSTEM DETAILS 4  |                            |                  |                      |
| SCALE  | AS NOTED                   | SHEET NO.        | 24                   |
| DRAWING NO.  |                            | C-24122-24       |                      |



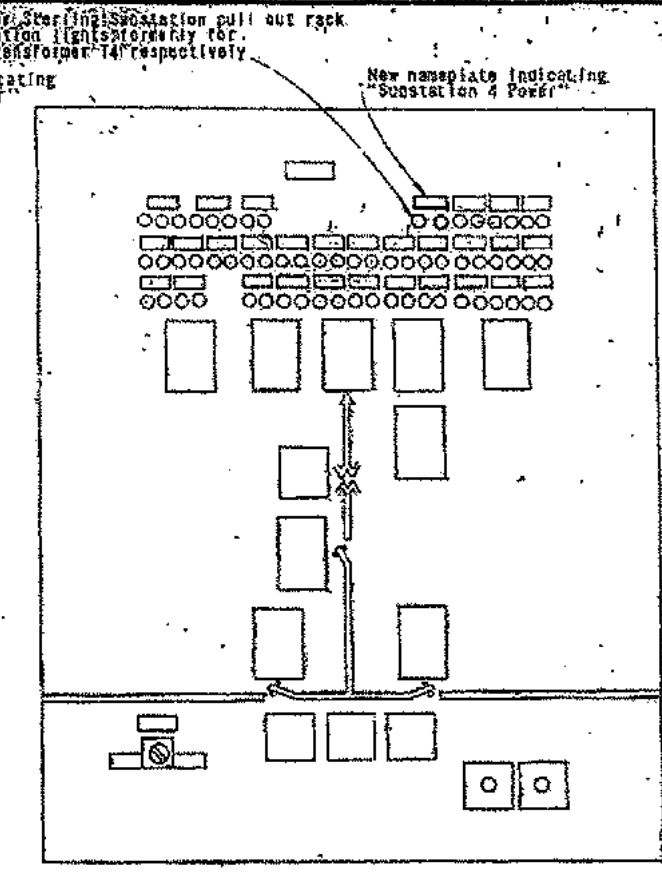
STERLING SUBSTATION  
PULL OUT RACK



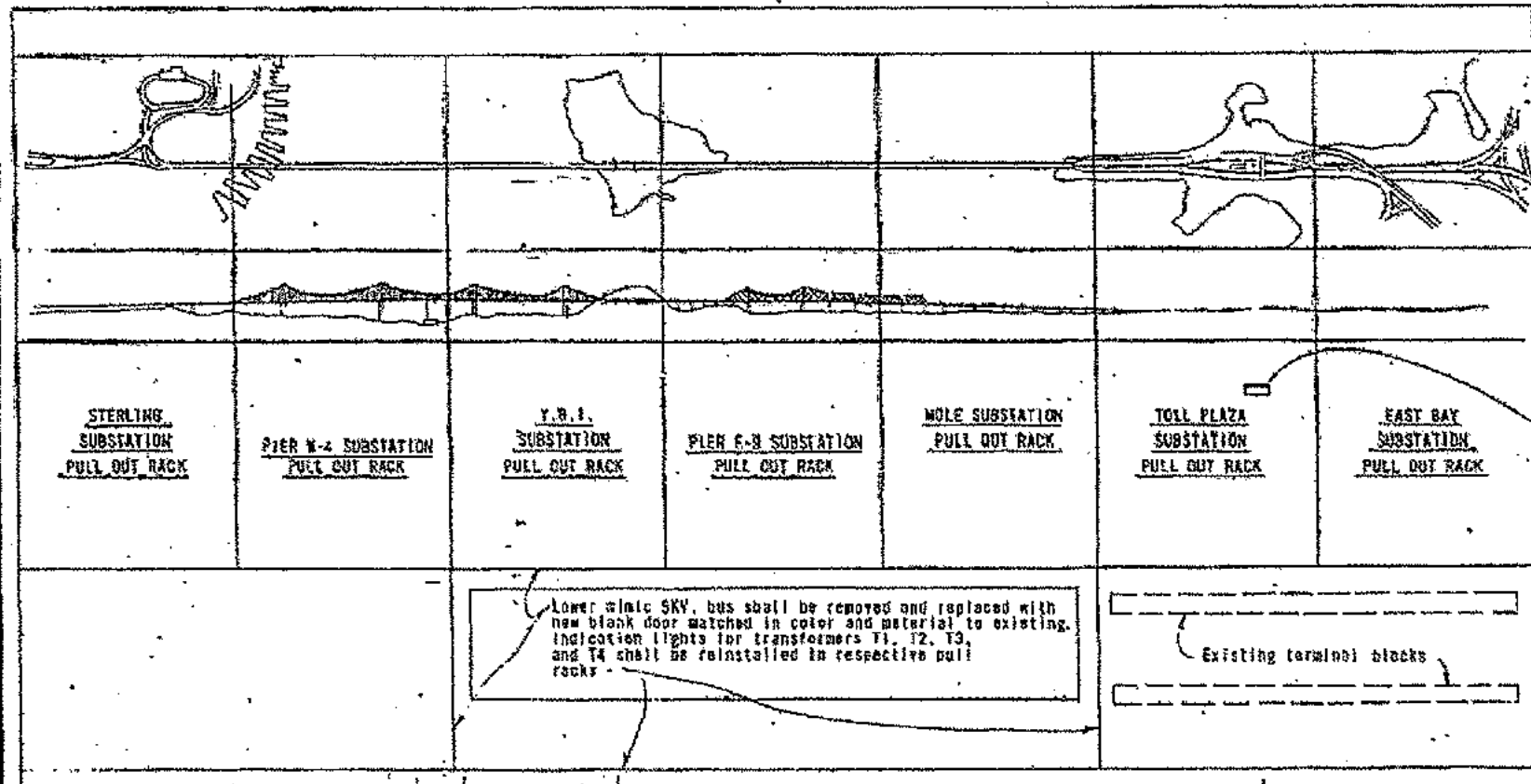
PIER W-4 SUBSTATION  
PULL OUT RACK



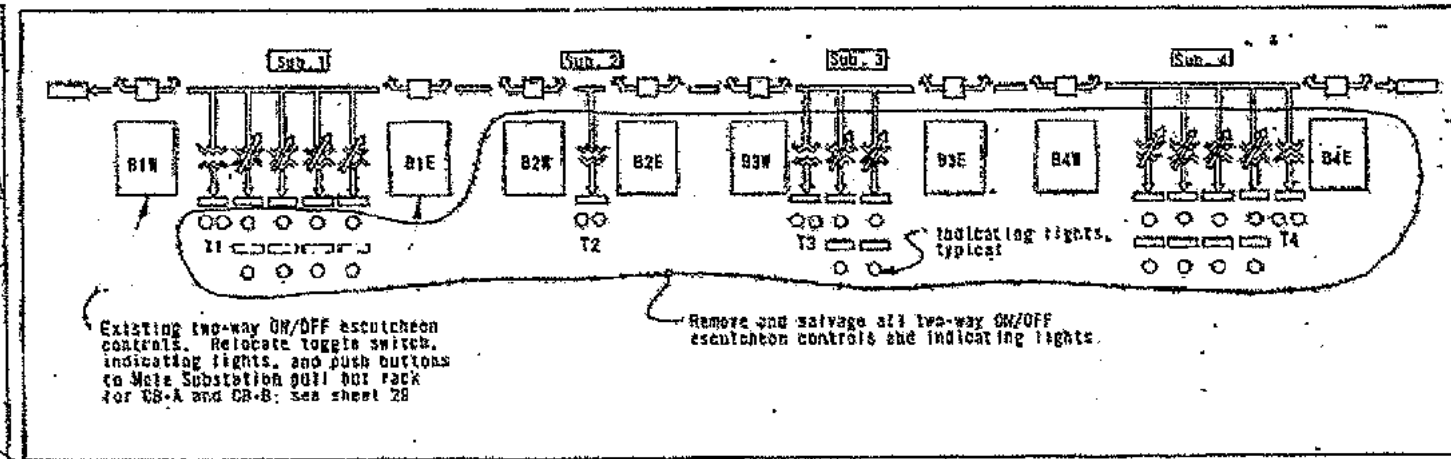
Y.B.I. SUBSTATION  
PULL OUT RACK



PIER E-9 SUBSTATION  
PULL OUT RACK



FRONT ELEVATION - CONTROL BOARD, SUPERVISORY CONTROL  
Scale: None



Remove existing nameplate indicating "Pier E-9 Substation 4" and replace with new nameplate indicating "Mole Substation".

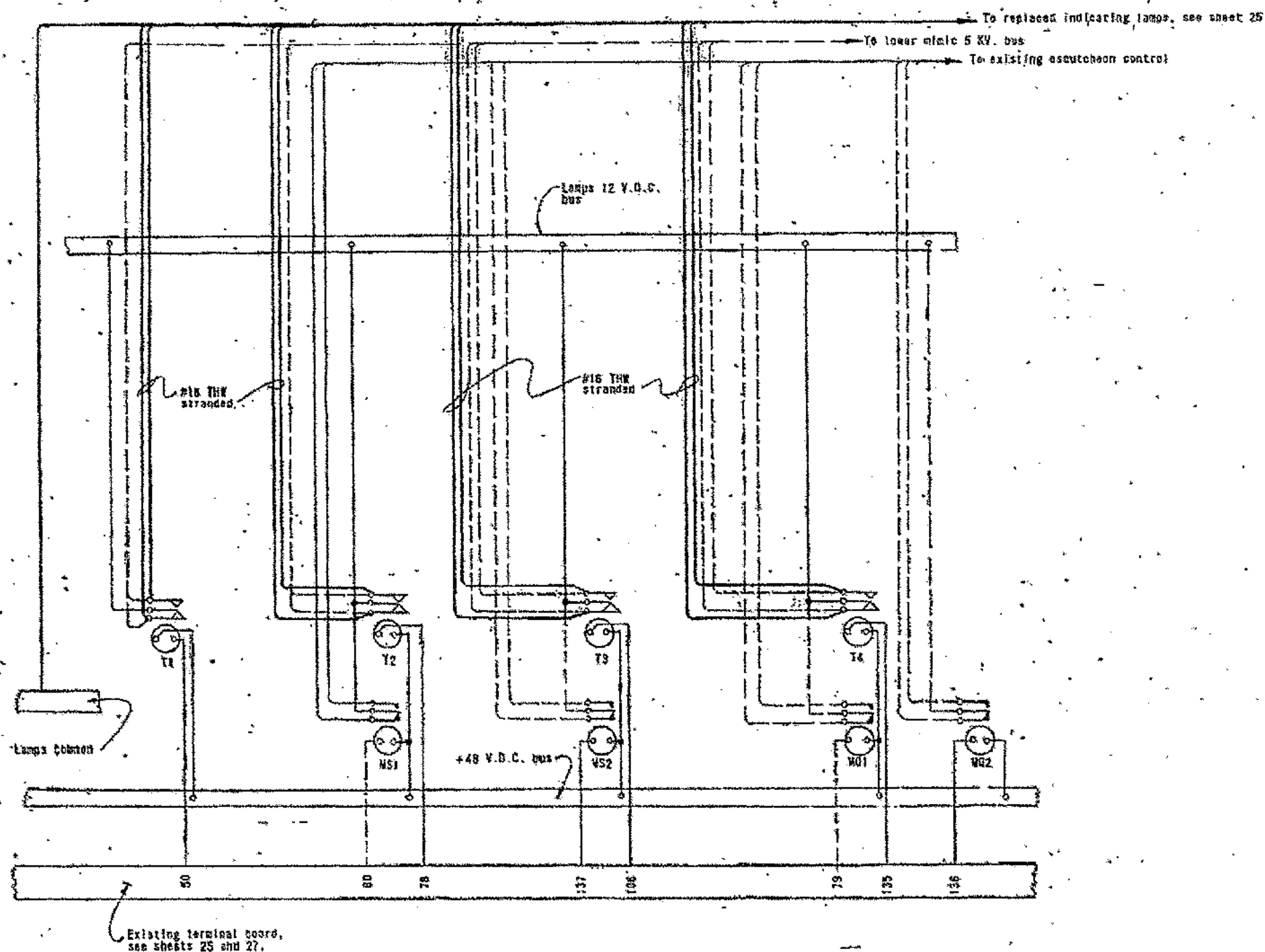
PICTORIAL VIEW - LOWER MIMIC 5KV BUS  
Scale: None

NOTES

- Heavy lines indicate new work.
- Control board is located in Toll Plaza Maintenance Building.



|  |                       |                        |  |
|--|-----------------------|------------------------|--|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                       |                        |  |
| DESIGN: W.A. ARANOFF   | CHECKED: [Signature]  | DATE: [Date]           |  |
| DRAWN: W.A. ARANOFF  | CHECKED: [Signature]  | DATE: [Date]           |  |
| APPROVED: [Signature]  | APPROVED: [Signature] |                        |  |
| APPROVAL RECOMMENDATION: [Signature]   |                       | APPROVED: [Signature]  |  |
| DATE: [Date]   |                       | DATE: [Date]           |  |
| SAN FRANCISCO - OAKLAND BAY BRIDGE ELECTRICAL ALTERATIONS  |                       |                        |  |
| SUPERVISORY CONTROL MODIFICATION - 1   |                       |                        |  |
| SCALE: NONE  | DATE: 25              | DRAWING NO: 0-44122-25 |  |



CONTROL AND INDICATOR PANEL - PARTIAL DIAGRAM

NOTES

1. Heavy lines indicate new work; dashed lines indicate removals.
2. For legend see sheet 2.
3. For equipment location see sheet 25.



|  |                         |                                   |  |
|--|-------------------------|-----------------------------------|--|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                         |                                   |  |
| DESIGNER<br>J. A. LARSEN   | CHECKED<br>J. A. LARSEN | DATE<br>12/3/73                   | APPROVED<br>DECEMBER 3, 1973<br><br>Charles Sain     |
| BY<br>J. A. LARSEN   | FOR<br>J. A. LARSEN     | IN CHARGE OF WORK<br>Raymond Chen |  |
| SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS<br>SUPERVISORY CONTROL MODIFICATION-2                     |                         |                                   | SCALE NONE<br>SHEET NO. 26<br>DRAWING NO. C-44322-26 |

Do not  
disturb  
existing  
connections

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Do not  
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SKV. Oil  
breaker  
indication

Relay B1E (Red)  
Relay B1W (Green)  
Relay B1E  
Relay B2W  
Relay B2E  
Relay B3W  
Relay B3E (Green)  
Relay B3E (Red)  
Relay B4W  
Relay B4E

Series  
lighting  
transformers  
indication

Relay R1  
Relay R2  
Relay R3  
Relay R4  
Relay R5  
Relay R6  
Relay R7  
Relay R8  
Relay R9  
Relay R10  
Relay R11  
Relay R12

Magnetic  
contactor  
indications

Relay M1  
Relay M2  
Relay M3  
Relay M4  
Relay M5  
Relay M6  
Relay M7  
Relay M8  
Relay M9  
Relay M10  
Relay M11  
Relay M12

Do not  
disturb  
existing  
connections

SKV. Oil  
circuit  
breakers  
control

BRK. B1E  
BRK. B2W  
BRK. B2E  
BRK. B3W  
BRK. B3E  
BRK. B4W  
BRK. B4E

West bay  
Fog alarm  
group control  
East bay

Dial control

Do not  
disturb  
existing  
connections,  
except as  
indicated

To existing  
connections

# TERMINAL BOARDS IN CONTROL BOARD

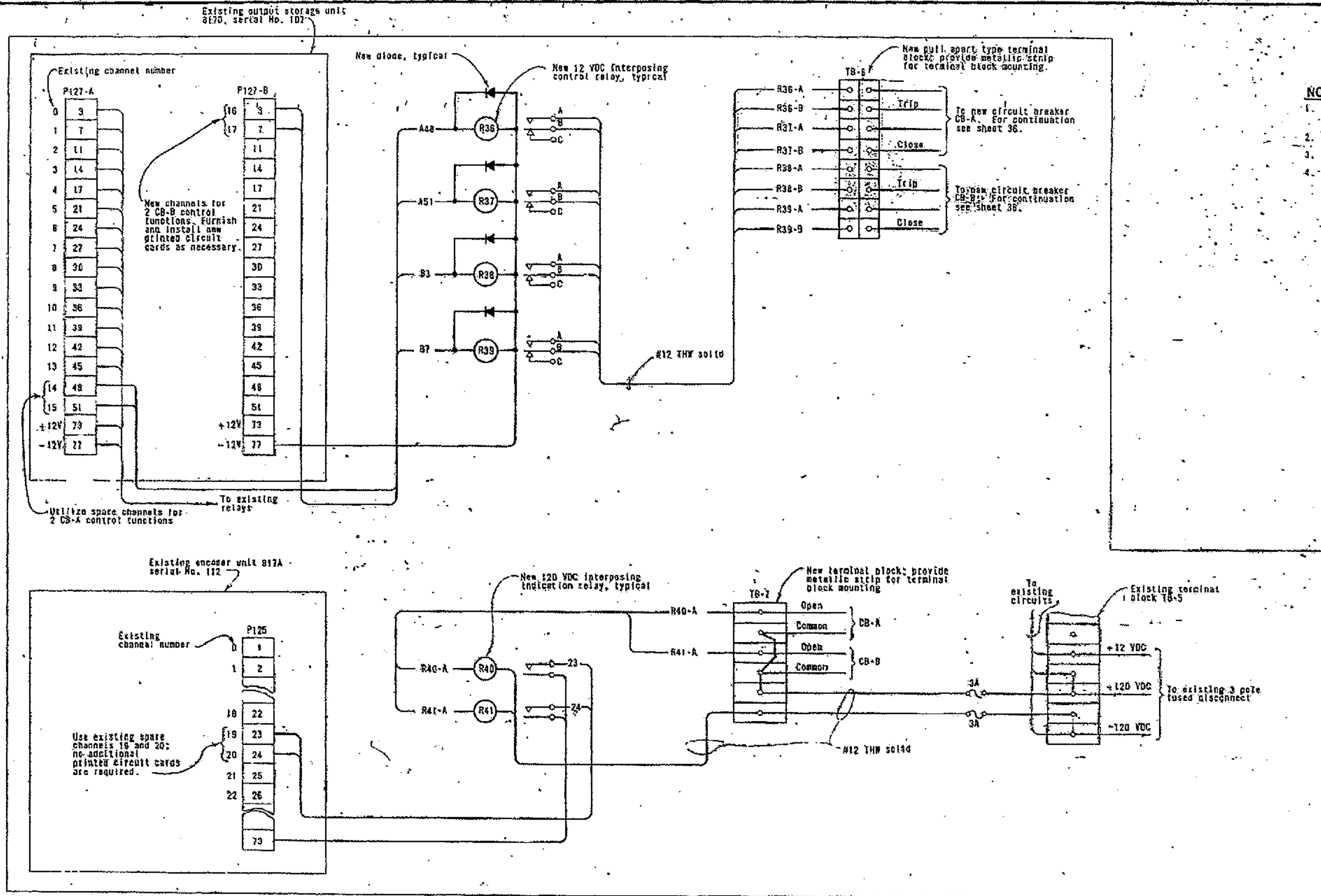
## NOTES

1. For control board see sheet 25.
2. Dashed lines indicate disconnect and removal.

SCALE IN INCHES ON ORIGINAL

|  |                               |
|--|-------------------------------|
| STATE OF CALIFORNIA - BUSINESS AND TRANSPORTATION AGENCY - DEPARTMENT OF TRANSPORTATION - TOLL BRIDGE ADMINISTRATION |                               |
| DESIGNED BY: <i>Raymond Chan</i>   | APPROVED: <i>Charles Seim</i> |
| CHECKED BY: <i>Charles Seim</i>  | DATE: DECEMBER 3, 1973        |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                               |
| ELECTRICAL ALTERATIONS   |                               |
| SUPERVISORY CONTROL MODIFICATION-3   |                               |
| SCALE: NONE  | SHEET NO: 27                  |
| DATE: NONE   | DRAWN BY: C-44122-27          |



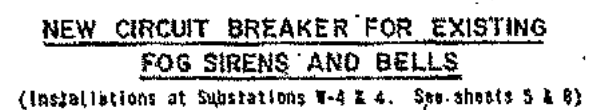


PARTIAL DIAGRAM  
REMOTE SUPERVISORY CONTROL CABINET  
MOLE SUBSTATION

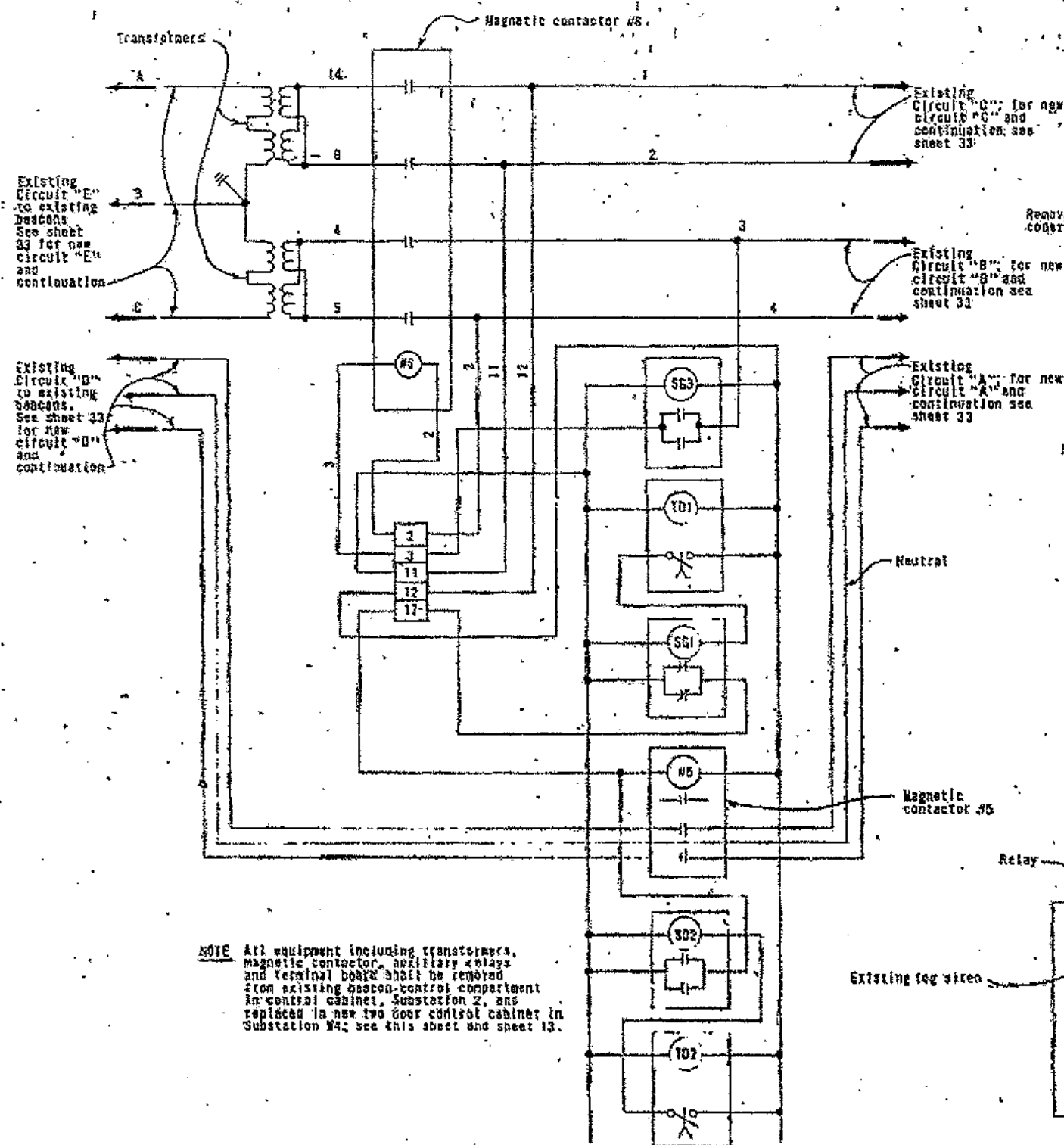
0 1 2 3 4  
SCALE IN INCHES ON ORIGINAL

|  |                                  |                                    |  |
|--|----------------------------------|------------------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                                  |                                    |  |
| DESIGN BY<br><i>[Signature]</i>  | CHECKED BY<br><i>[Signature]</i> | APPROVED DECEMBER 3, 1973          |  |
| DESIGNED BY<br><i>[Signature]</i>  | CHECKED BY<br><i>[Signature]</i> | APPROVED BY<br><i>[Signature]</i>  |  |
| IN CHARGE OF DESIGN<br><i>[Signature]</i>  |                                  | APPROVED BY<br><i>[Signature]</i>  |  |
| APPROVAL RECOMMENDED<br><i>[Signature]</i>   |                                  | APPROVED BY<br><i>[Signature]</i>  |  |
| DATE<br>12/3/73  |                                  | BY<br>Charles Seim                 |  |
| REVISION   |                                  | DRAWING NO.<br>C-4422-28           |  |
| SCALE<br>NONE  |                                  | SHEET NO.<br>28                    |  |
| PROJECT<br>SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS  |                                  | SUPERVISORY CONTROL MODIFICATION-4 |  |

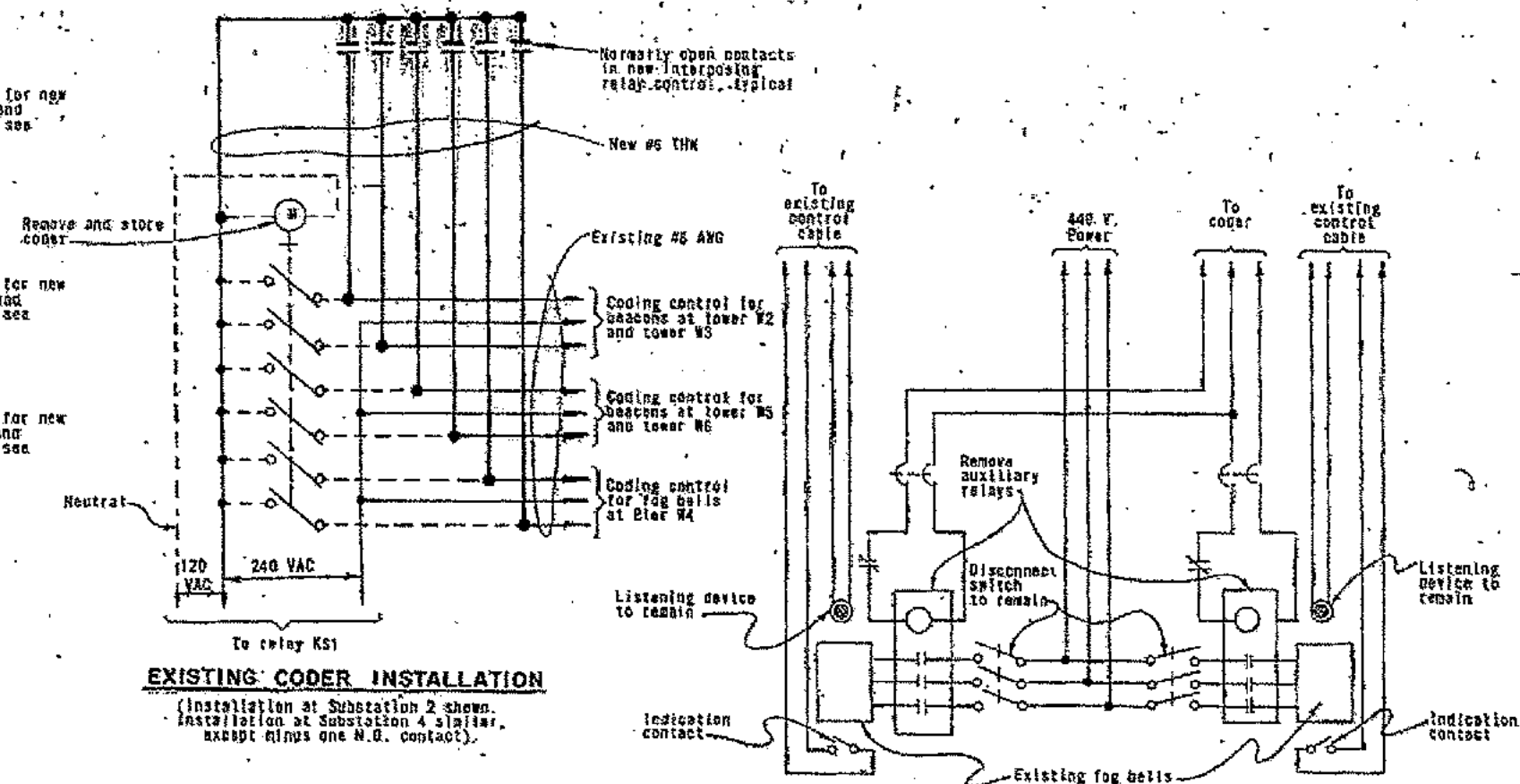




|  |                         |   |                         |
|--|-------------------------|---|-------------------------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                         |   |                         |
| DESIGN BY A. A. HARRIS   | DATE 12/3/53            | SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS<br>NAVIGATION AID RECONNECTION - I |                         |
| DRAWN BY C. C. HARRIS  | CHECKED BY C. C. HARRIS |   |                         |
| APPROVED BY A. A. HARRIS   | DATE 12/3/53            | APPROVED DECEMBER 3, 1953   |                         |
| IN CHARGE OF C. C. HARRIS  |                         | SCALE NONE  |                         |
| APPROVAL RECOMMENDED BY C. C. HARRIS   |                         | DATE NOV 30   | DRAWING NO. C-4 3122-36 |

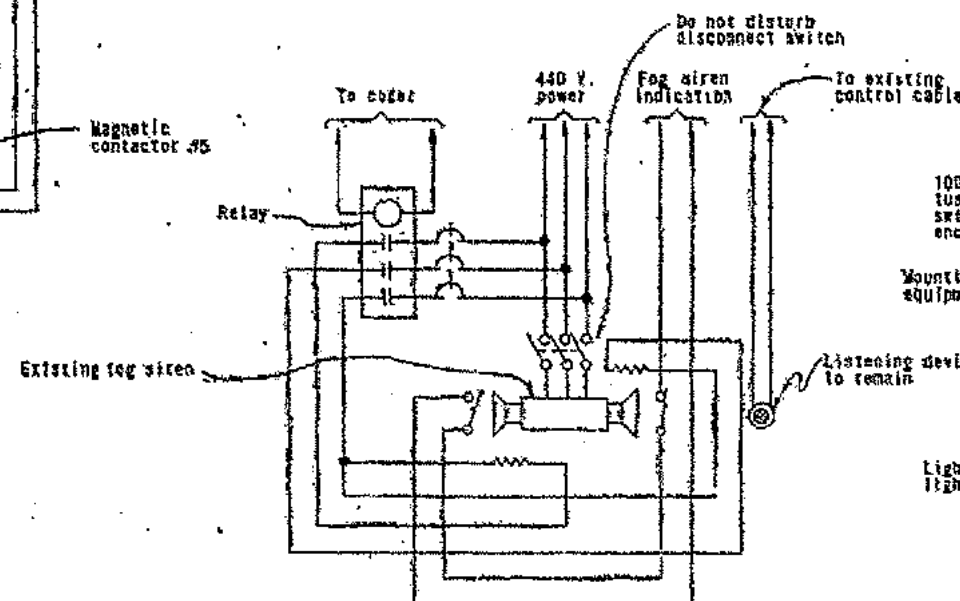


EXISTING BEACON CONTROL - WEST BAY  
(Installation at Substation 2)



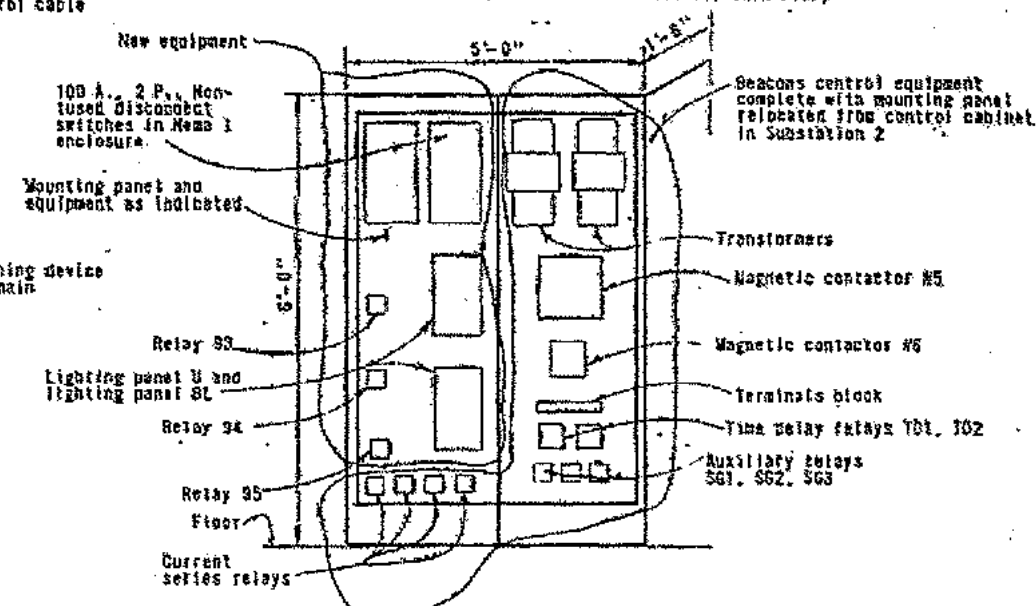
EXISTING FOG BELL INSTALLATION

{Installation at Pier W4; installation at Piers  
E4, E5, E6 identical, except there is one bolt for each Pier}



### EXISTING FOG SIREN INSTALLATION

(Installation at P/ops W2, W3, W5, W6, E2 and E3)



NEW TWO DOOR CONTROL CABINET

(Sagitt with doors opened)

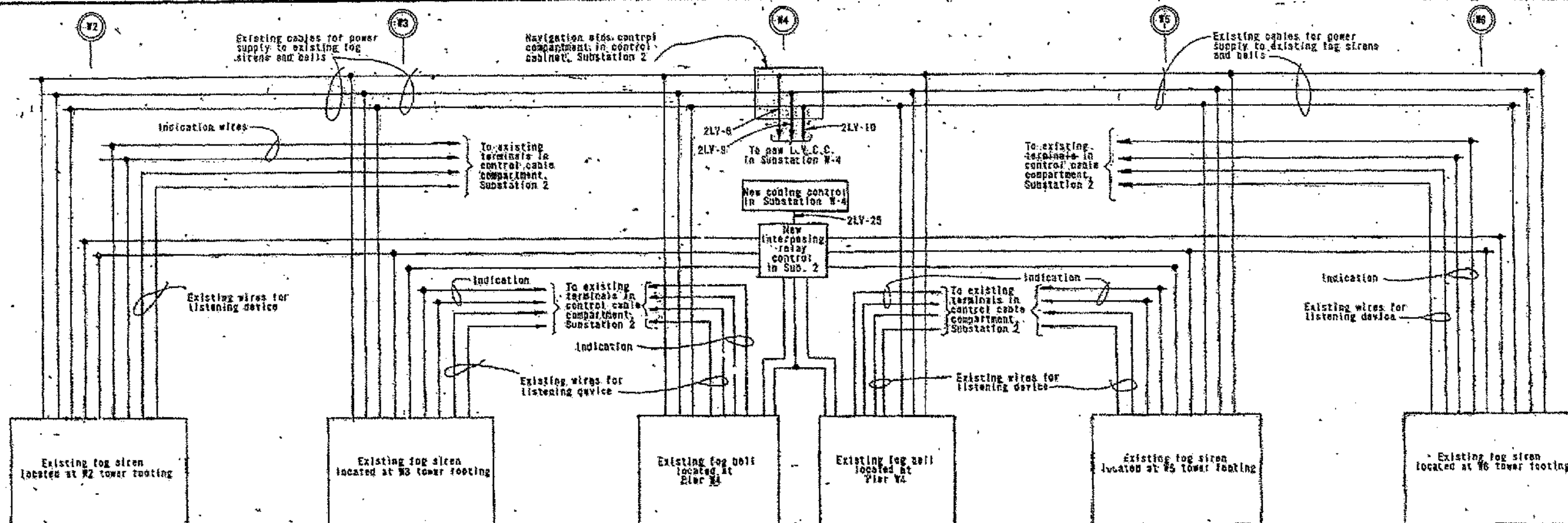
Scale: None  
(Substation #4)

- ## NOTES

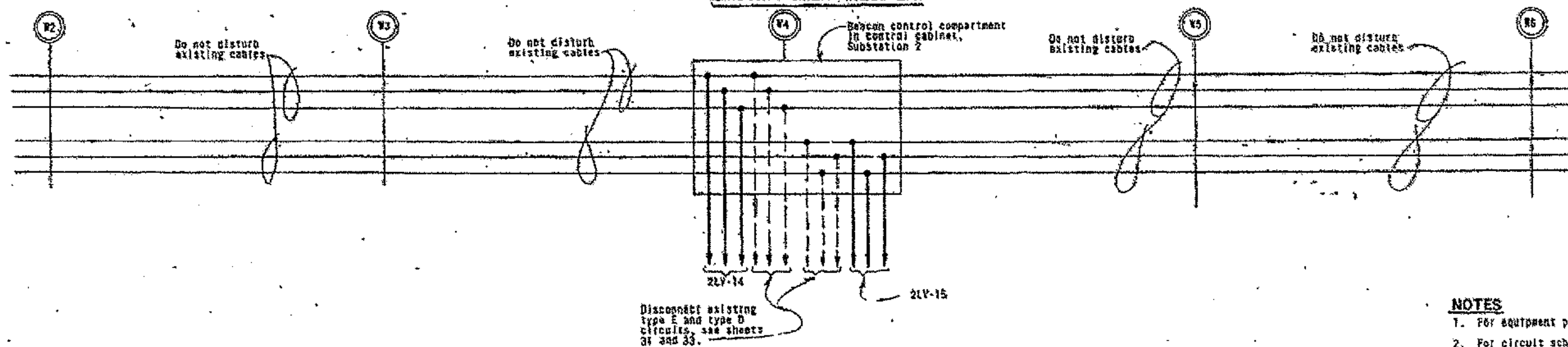
1. For power distribution cables along bridge, see sheet 32.
2. For schematics see sheet 33;
3. Dashed lines indicate disconnect and removal; heavy lines indicate new work.

|  |                       |                           |   |
|--|-----------------------|---------------------------|---|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                       |                           |   |
| DESIGN   | T.A. ARRANGED BY      | DR. <i>C. S. Smith</i>    | SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS<br>NAVIGATION AID RECONNECTION - 2 |
| PLAN   | BY <i>C. S. Smith</i> | CHK. <i>C. S. Smith</i>   |   |
| SPECIFICATION  | BY <i>C. S. Smith</i> | SIGNED <i>C. S. Smith</i> |   |
| IN CHARGE OF DESIGN  | <i>Raymond Chan</i>   |                           |   |
| APPROVAL RECOMMENDED   | <i>Thomas R. Blum</i> |                           | SCALE NONE<br>SHEET NO. 31<br>CHECKED NO. C-44122-31  |
| APPROVED <i>December 3, 1973</i><br><i>Walter Lee</i>  |                       |                           |   |





POWER DISTRIBUTION FOR  
EXISTING SIRENS-WEST BAY



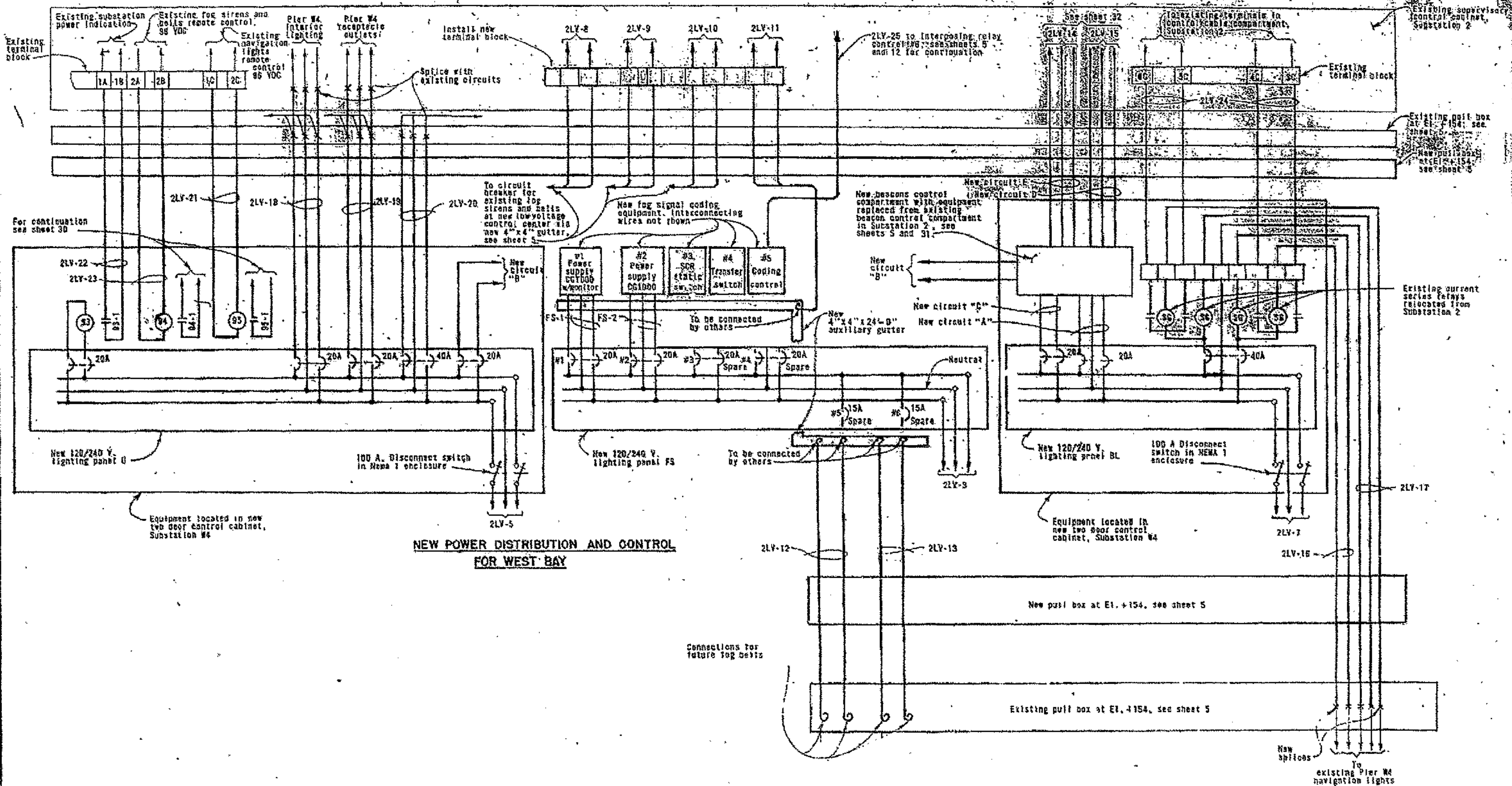
POWER DISTRIBUTION FOR NAVIGATION  
LIGHTS AND BEACONS-WEST BAY

- ## NOTES

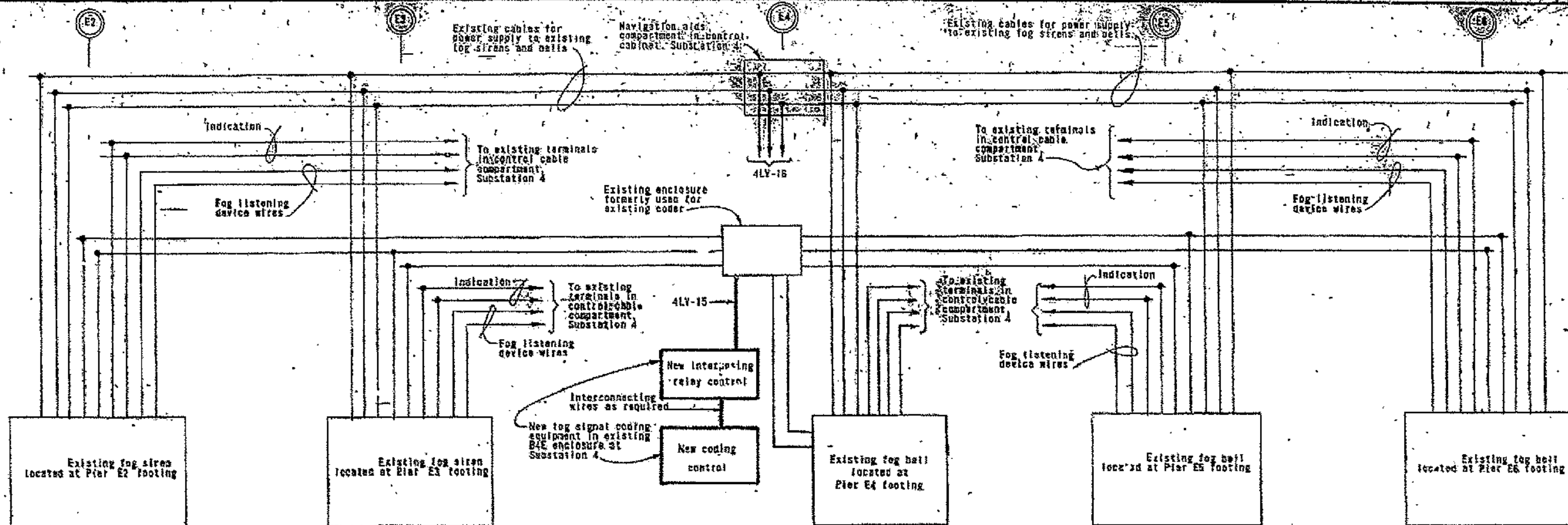
1. For equipment physical location see sheets 12, 13.
2. For circuit schedule see sheet 5.
3. For schematics, see sheets 31 and 33.
4. Dashed lines indicate disconnect and removal;  
heavy lines indicate new work.



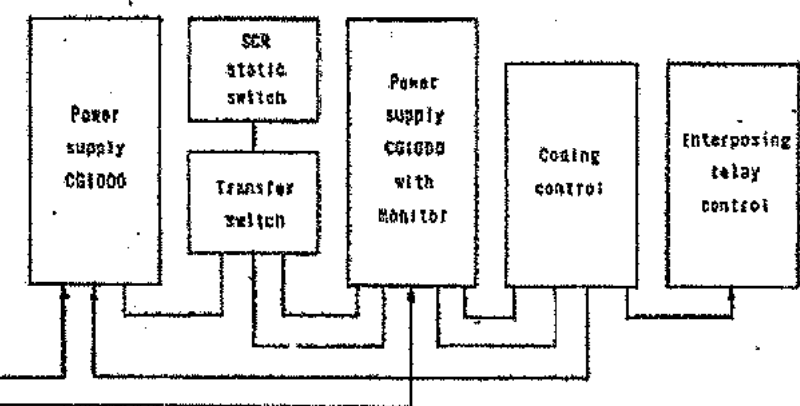
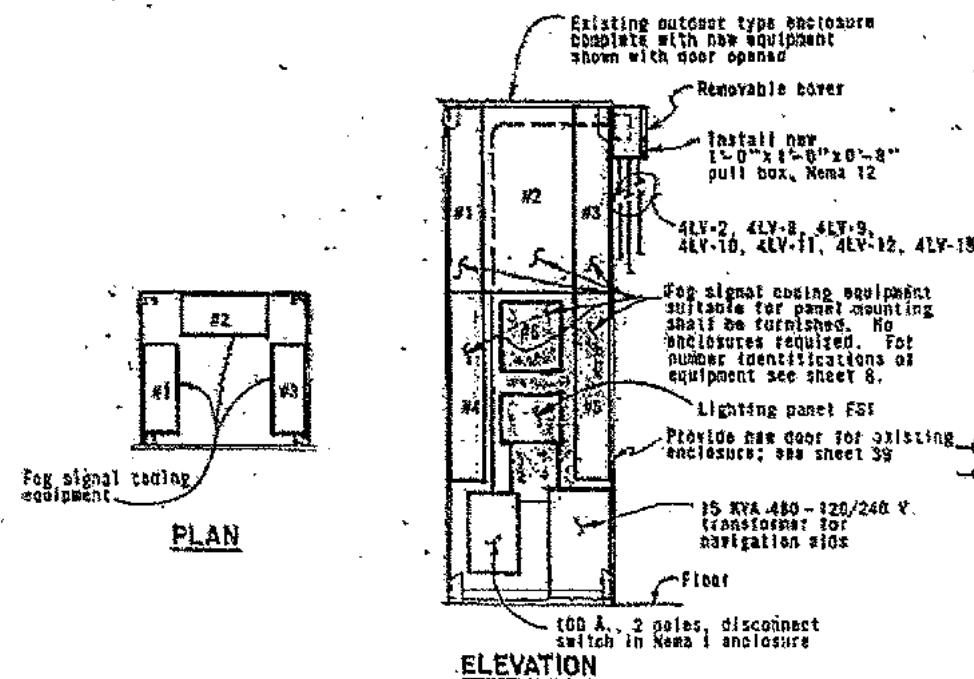
|   |                        |                                |  |
|---|------------------------|--------------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION. |                        |                                |  |
| DESIGNER  | BY <u>A. ABRAMOFF</u>  | CHECKED BY <u>R. G. WILSON</u> | <b>SAN FRANCISCO-OAKLAND BAY BRIDGE</b><br><b>ELECTRICAL ALTERATIONS</b><br><b>NAVIGATION AID RECONNECTION - 3</b> |
| DRAWN   | BY <u>R. G. WILSON</u> | CHECKED BY <u>R. G. WILSON</u> |  |
| APPROVED  | BY <u>A. ABRAMOFF</u>  | BY <u>A. ABRAMOFF</u>          |  |
| IN CHARGE OF DESIGN   |                        |                                | APPROVED <u>DECEMBER 3, 1973</u>   |
| <u>Raymond Chene</u><br>APPROVAL RECOMMENDED  |                        |                                | SCALE NONE<br>SHEET NO. 32<br>DRAWING NO. C-4-5122-32  |



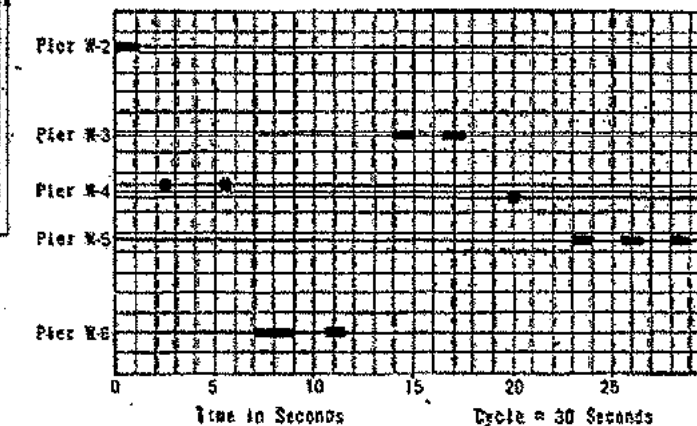
|  |               |                        |  |
|--|---------------|------------------------|--|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |               |                        |  |
| DESIGN: W. J. ABRAHAMSON, JR.  | DATE: 12/3/73 | DRAWING NO. 0-44128-33 |  |
| APPROVED: [Signature]  | DATE: 12/3/73 | PROJECT NO. 33         |  |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |               | ELECTRICAL ALTERATIONS |  |
| NAVIGATION AID RECONNECTION-4  |               | DRAWING NO. 0-44128-33 |  |



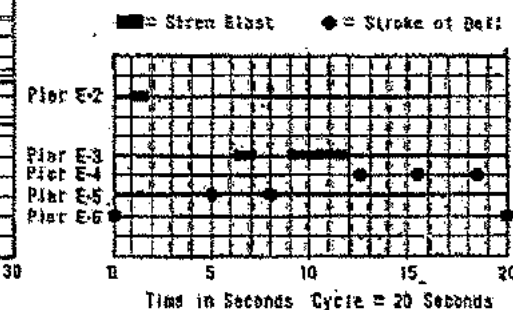
POWER DISTRIBUTION FOR EXISTING  
FOG SIRENS -- EAST BAY



BLOCK DIAGRAM  
FOG SIGNAL CODING EQUIPMENT  
No Scale



WEST BAY



EAST BAY

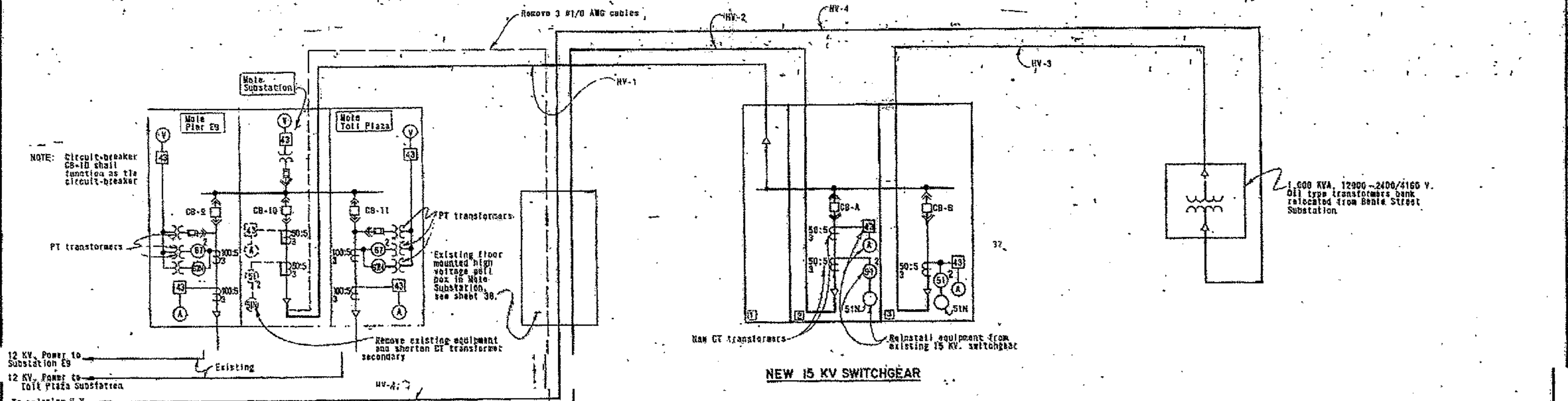
SYNCHRONIZED OPERATION CHART OF FOG SIGNALS

NEW INSTALLATION IN EXIST. ENCLOSURE-SUBSTATION 4  
(Formerly oil circuit breaker B4E enclosure)

# NOTES:

1. For equipment physical location also see sheet 16.
2. For circuit schedule, see sheet 8.
3. For schematics see sheet 8.
4. Dashed lines indicate disconnect and removal; heavy lines indicate new work.

|   |  |
|---|--|
| STATE OF CALIFORNIA -- BUSINESS AND TRANSPORTATION AGENCY -- DEPARTMENT OF TRANSPORTATION -- TOLL BRIDGE ADMINISTRATION |  |
| DESIGN: H. A. LARRABEE, JR. (10/1/73)   | APPROVED: DECEMBER 3, 1973               |
| DRAWN: H. A. LARRABEE, JR. (10/1/73)  | IN CHARGE OF DESIGN: <i>Richard Chen</i> |
| IN CHARGE OF DESIGN: <i>Richard Chen</i>  | APPROVAL REQUIRED: <i>Charles Seim</i>   |
| SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS  |  |
| NAVIGATION AID RECONNECTION, # 5  |  |
| SCALE: NONE   | SHEET NO. 34                             |
| DRAWING NO. C-44122-34  |  |

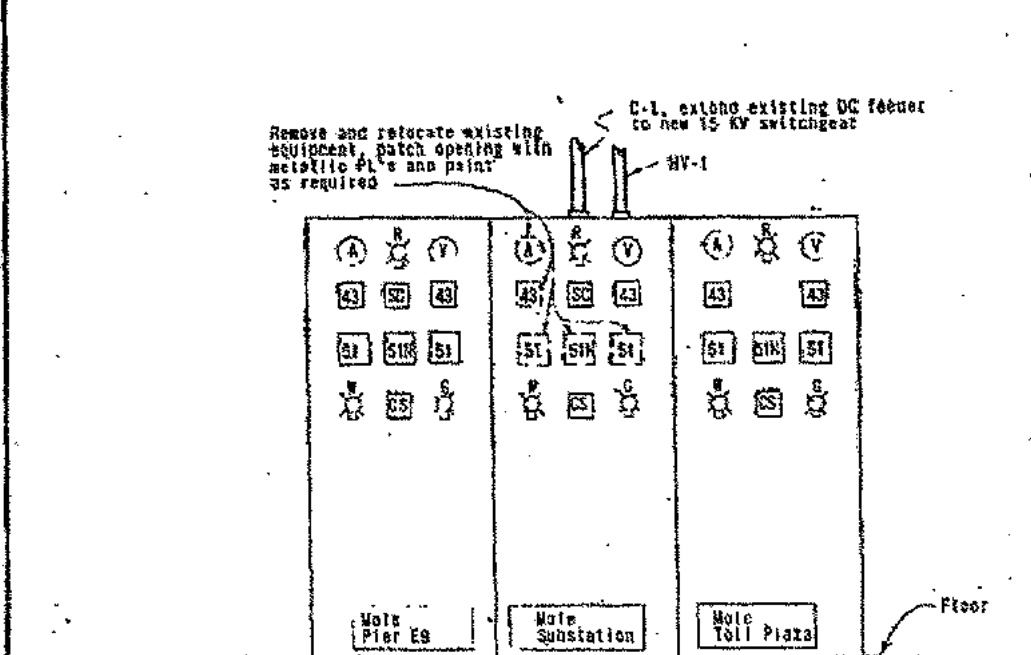


NOTE: Circuit-breaker CB-10 shall function as tie circuit-breaker

12 KV, Power to Substation E9

12 KV, Power to Toll Plaza Substation

Is existing H.V. manhole #12, see sheet 37



EXISTING 15 KV SWITCHGEAR (Front view)

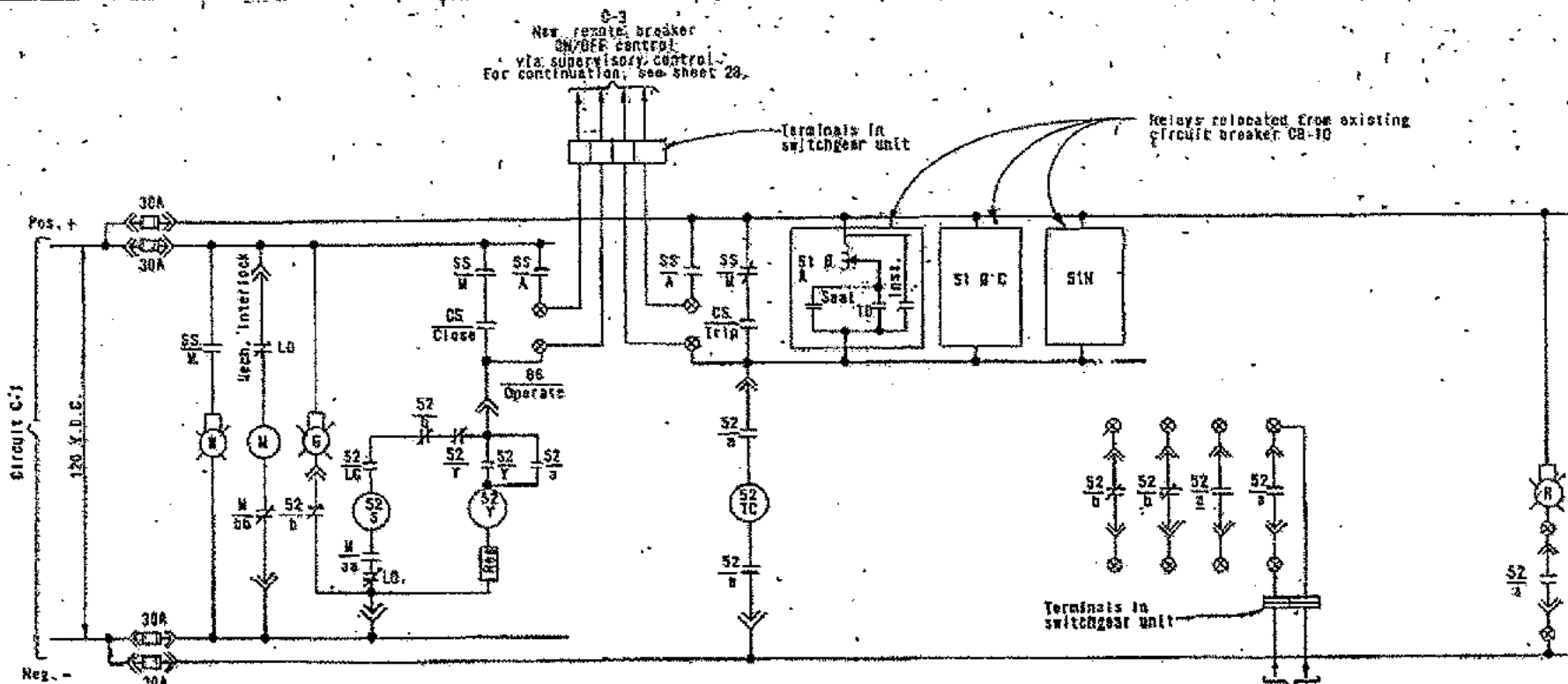
NEW 15 KV SWITCHGEAR (Front view)

| NEW 15 KV. SWITCHGEAR NAMEPLATES SCHEDULE |                      |                     |                     |             |       |
|---|----------------------|---------------------|---------------------|-------------|-------|
| PLATE NUMBER                              | INSCRIPTION          |                     | PLATE SIZE (INCHES) | LETTER SIZE | NOTES |
| 1   | Cable Entrance       |                     | 1 1/2"              | 1/4"        |       |
| 2   | Circuit-breaker CB-A | Station Transformer | 7/8"                | 1/4"        |       |
| 3   | Circuit-breaker CB-B | 5 KV. Transformer   | 7/8"                | 1/4"        |       |
| 4   | Ammeter              |                     | 1 1/2"              | 1/4"        |       |
| 5   | Breaker Closed       |                     | 1 1/2"              | 1/4"        |       |
| 6   | Ammeter Switch       |                     | 1 1/2"              | 1/4"        |       |
| 7   | Selector Switch      |                     | 1 1/2"              | 1/4"        |       |
| 8   | Phase Overcurrent    | Relay               | 7/8"                | 1/4"        |       |
| 9   | Ground Overcurrent   | Relay               | 7/8"                | 1/4"        |       |
| 10  | Phase Overcurrent    | Relay               | 7/8"                | 1/4"        |       |
| 11  | Selector Switch On   | Manual Position     | 7/8"                | 1/4"        |       |
| 12  | Control Switch       |                     | 1 1/2"              | 1/4"        |       |
| 13  | Breaker Open         |                     | 1 1/2"              | 1/4"        |       |

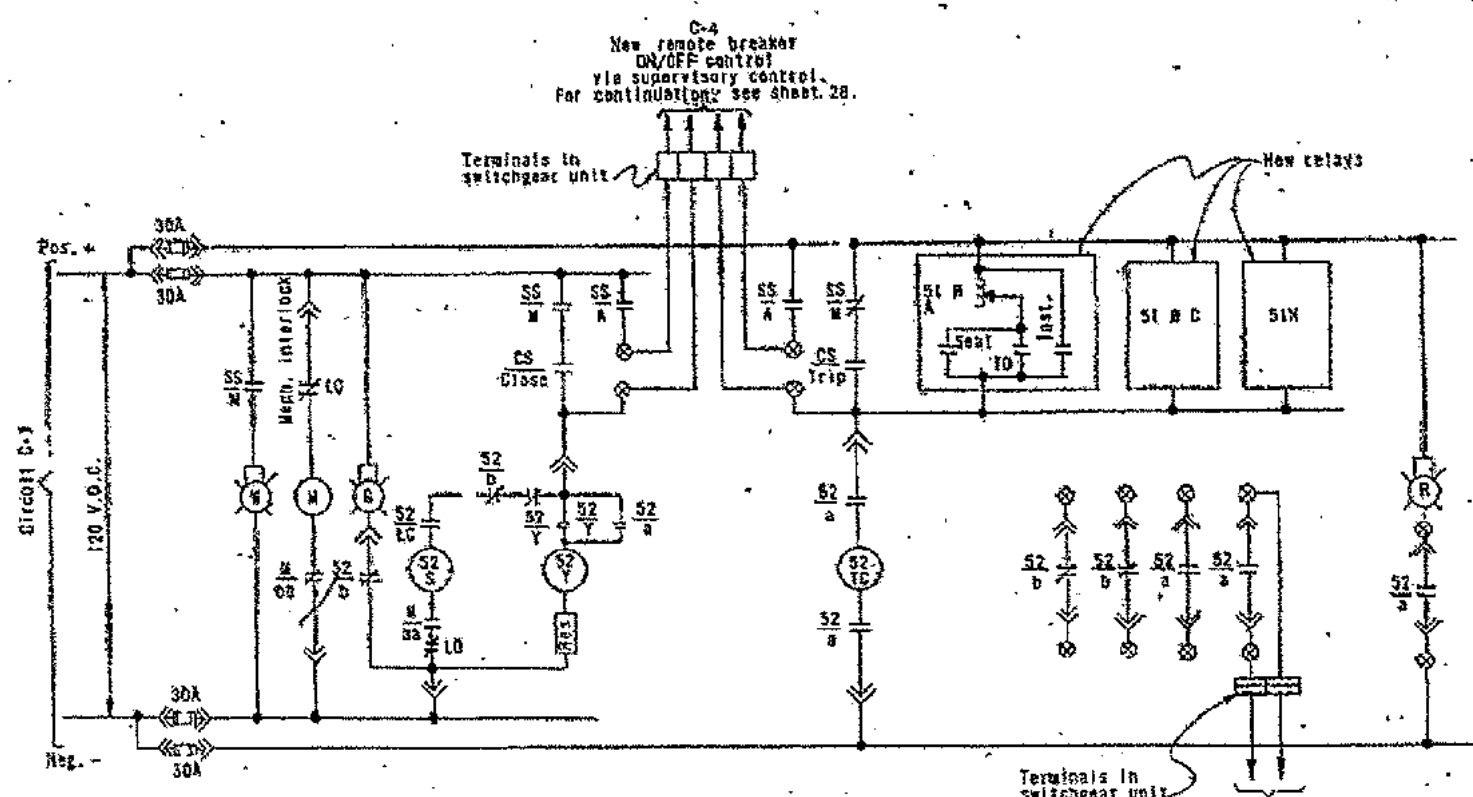
- NOTES
- For schematics see sheets 6 and 36
  - For physical location see sheet 37
  - For legend see sheets 2 and 36
  - For circuit schedule see sheet 37

|  |          |                        |          |
|--|----------|------------------------|----------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |          |                        |          |
| DESIGN   | BY       | DATE                   | APPROVED |
| MAIN   | BY       | DATE                   | APPROVED |
| IN CHARGE OF WORK  | APPROVED |                        |          |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |          | ELECTRICAL ALTERATIONS |          |
| INSTALLATION AT MOLE SUBSTATION-1  |          | SCALE NONE             |          |
| SHEET NO. 35   |          | DRAWING NO. D-44122-35 |          |

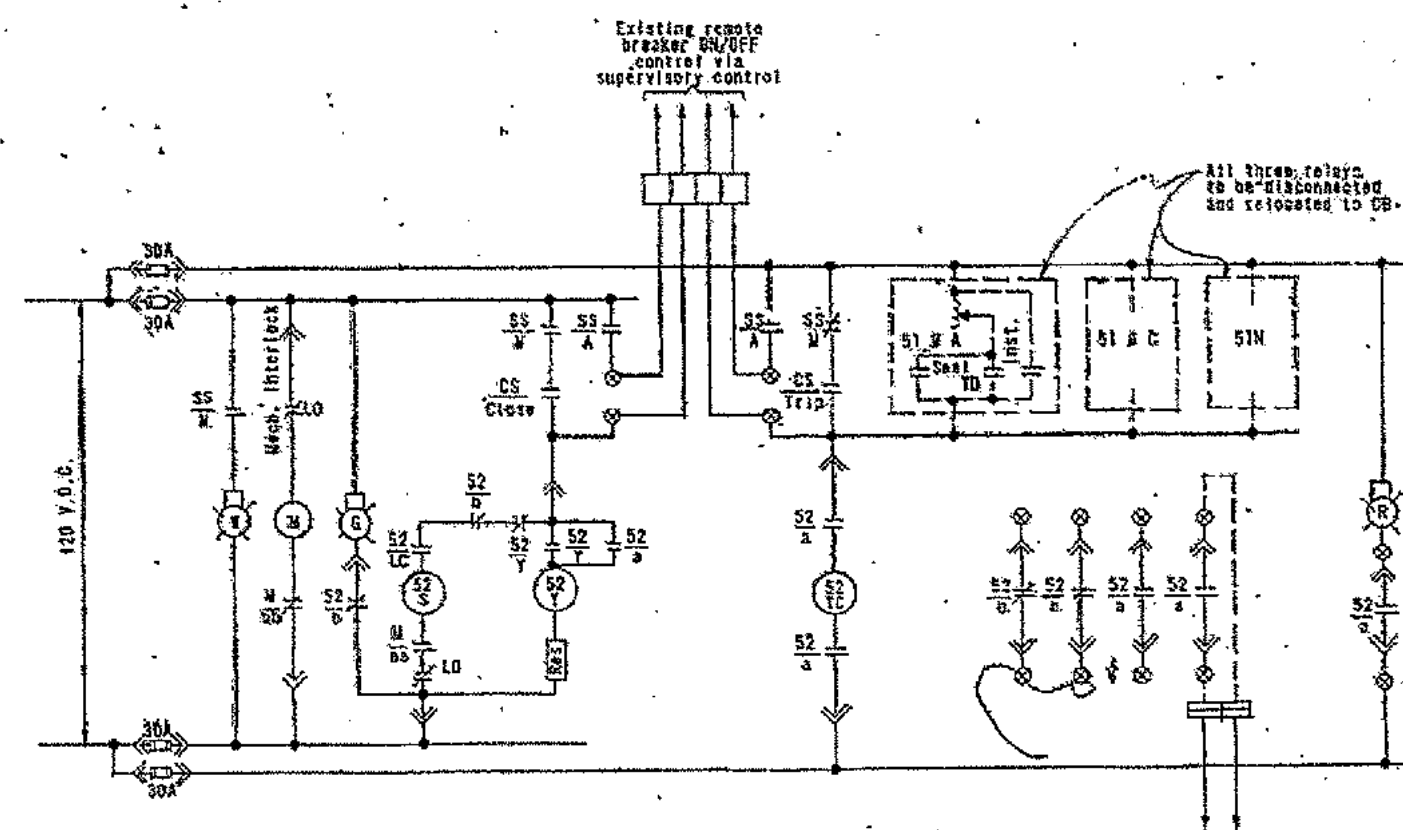




NEW H.V. CIRCUIT BREAKER - CB-A



NEW H.V. CIRCUIT BREAKER - CB-B



EXISTING H.V. CIRCUIT BREAKER - CB-10

LEGEND

- 43 Voltmeter or ammeter switch.
- V Voltmeter
- A Ammeter
- CT Current transformer
- PT Potential transformer
- SI Phase overcurrent relay
- SIN Overcurrent relay residually connected
- SS Selector switch
- S2-S Circuit breaker solenoid
- S2-Y Circuit breaker auxiliary relay
- S2-TS Circuit breaker trip relay
- M Spring winding motor
- Inst. Instantaneous
- a,aa Auxiliary contact, closed when device closed
- b,bb Auxiliary contact, open when device closed
- LC Latching checking switch
- TD Time delay
- ⊗ Terminate
- CS Control switch
- LO Lock out
- Mech. Int. Mechanical Interlock

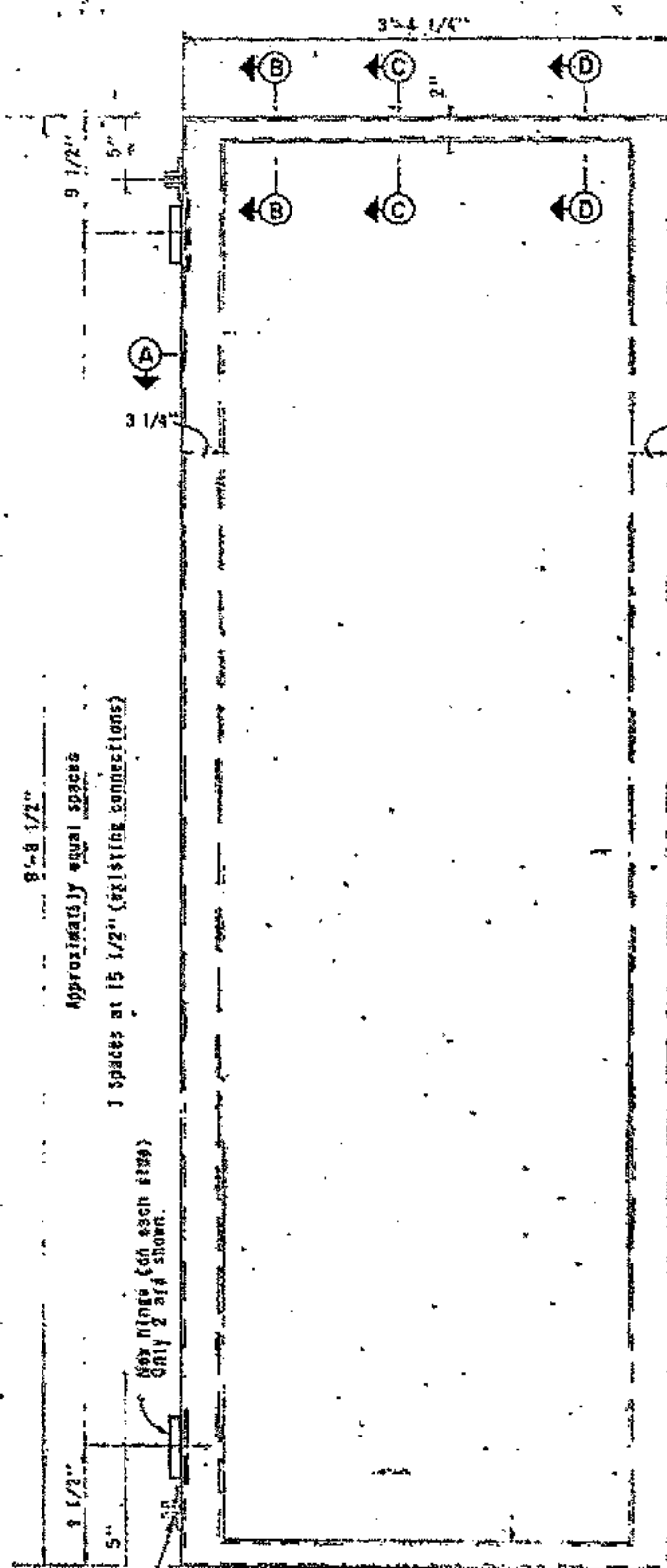
NOTES

1. For circuit breaker physical location see sheet 35.
2. For circuit schedule see sheet 37.

|  |                                |                                    |              |
|--|--------------------------------|------------------------------------|--------------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                                |                                    |              |
| PROJECT: SAN FRANCISCO - OAKLAND BAY BRIDGE  | DESIGN: ELECTRICAL ALTERATIONS | APPROVED: DECEMBER 3, 1973         |              |
| DESIGNED BY: [Signature]   | CHECKED BY: [Signature]        | SAN FRANCISCO - OAKLAND BAY BRIDGE |              |
| IN CHARGE OF DESIGN: [Signature]   | APPROVAL: [Signature]          | ELECTRICAL ALTERATIONS             |              |
| INSTALLATION AT MOLE SUBSTATION-2  |                                | SCALE: NONE                        | SHEET NO. 36 |
| DRAWN BY: [Signature]  |                                | DATE: 12-1-73                      |              |

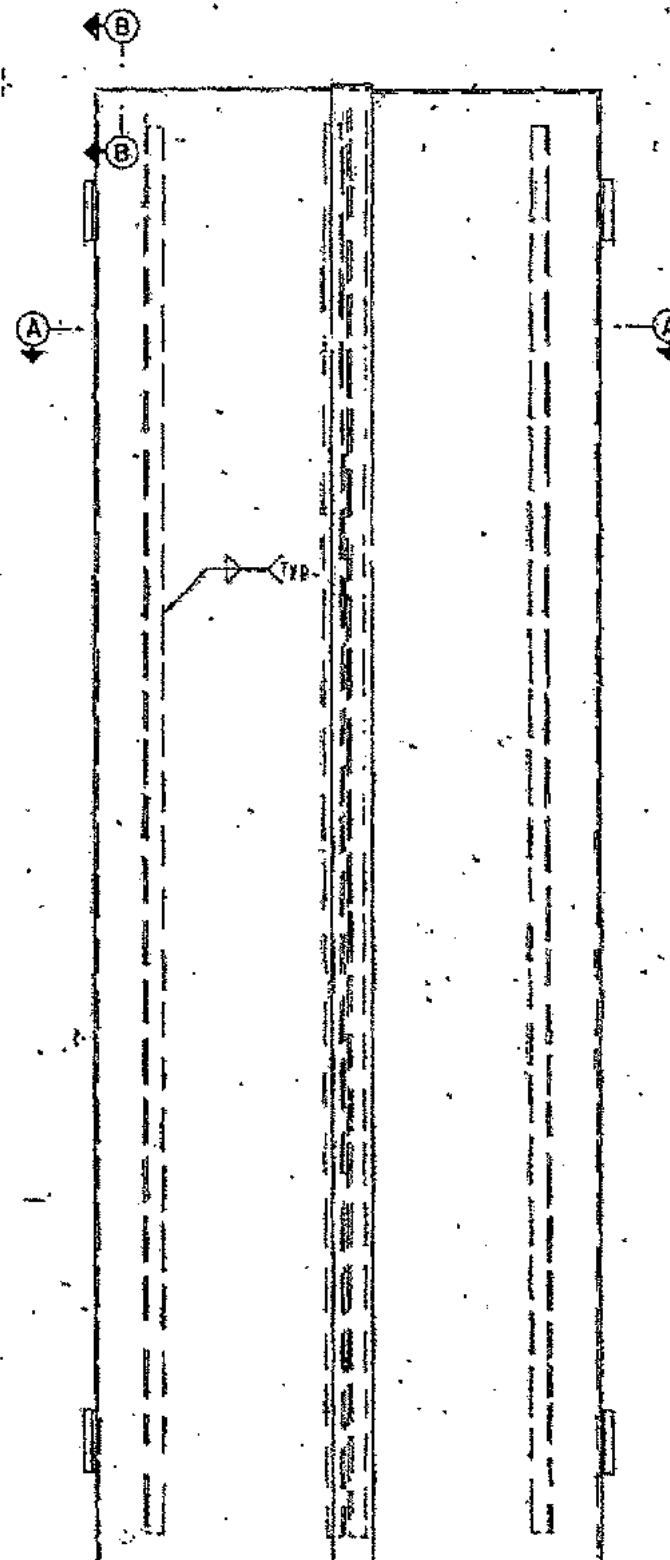






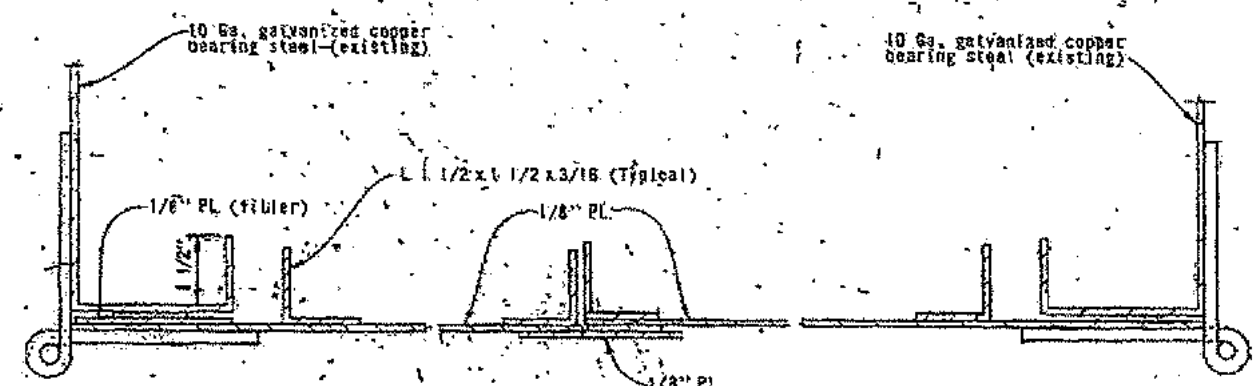
#### EXISTING DOOR FRAME

Note: Existing door not shown.  
Scale: 1 1/2" = 1'-0"

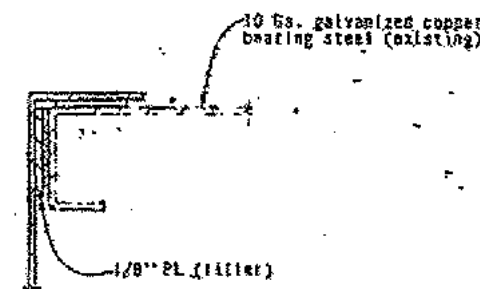


#### NEW DOORS

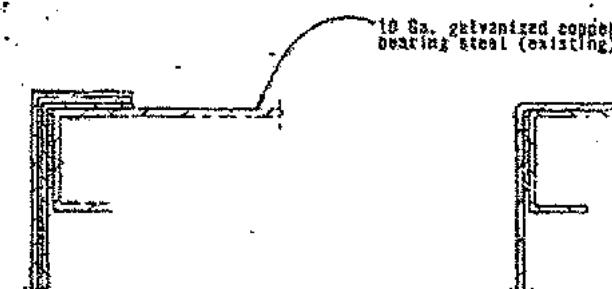
Scale: 1 1/2" = 1'-0"



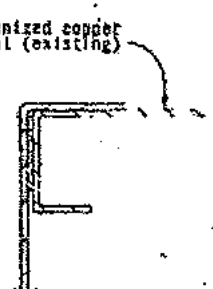
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

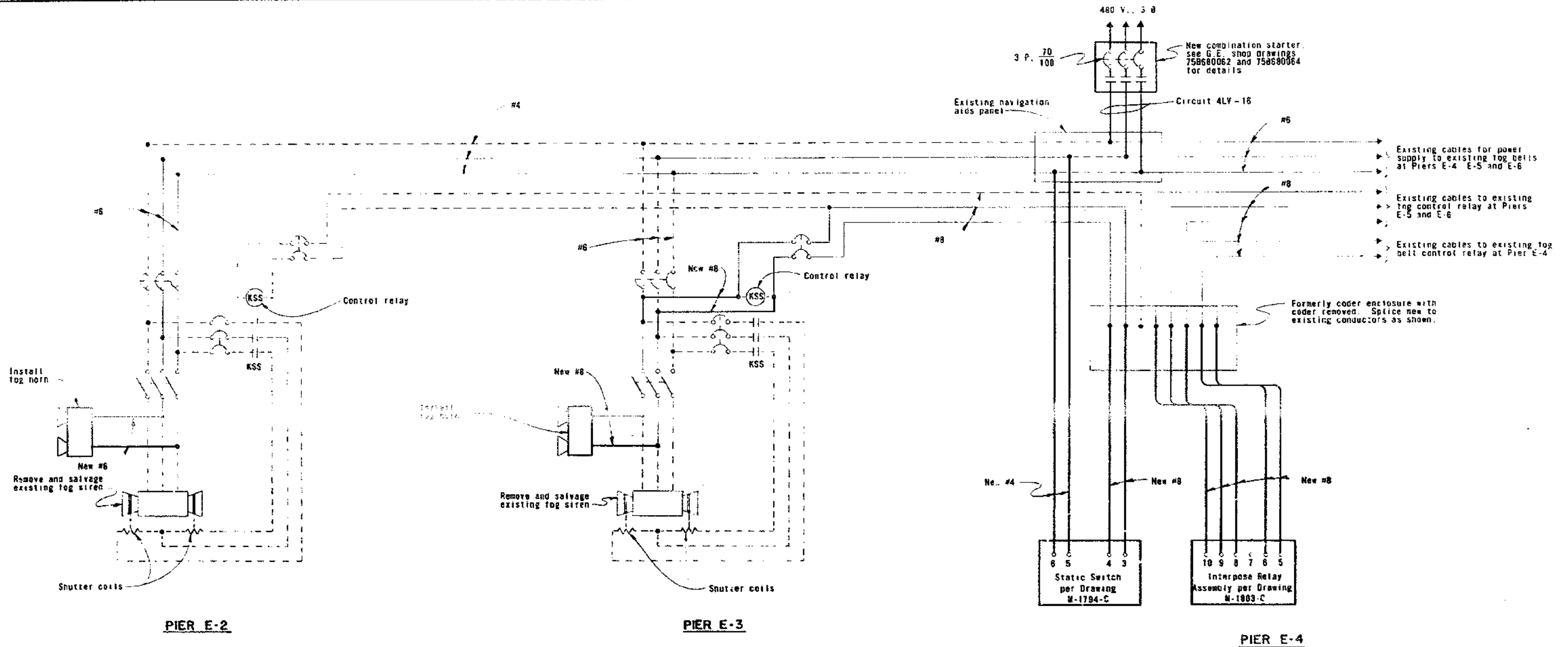
#### NOTES

- Two existing watertight single doors at East and West sides of Substation 4 to be removed. New double watertight doors to be installed.
- Hinges shall be bolted to existing frames. The Contractor shall submit the size, type and number of hinges.
- The door latch shall engage at the top and bottom and at a third point along the door. The latch shall be lockable.
- The door shall have a gasket to provide a watertight seal.
- Symbol indicates gasket.
- Install 1/2" breather at top of enclosure.
- For location of existing enclosures, see sheet 16.



|  |              |          |          |
|--|--------------|----------|----------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |              |          |          |
| REGION   | ST. 1000     | CH. 1000 | CH. 1000 |
| PLANN.   | ST. 1000     | CH. 1000 | CH. 1000 |
| ENGINEER   | ST. 1000     | CH. 1000 | CH. 1000 |
| BY CHARGE OF DESIGN  |              |          |          |
| APPROVAL RECOMMENDATION  |              |          |          |
| APPROVED DECEMBER 3, 1973  |              |          |          |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |              |          |          |
| ELECTRICAL ALTERATIONS   |              |          |          |
| OUTDOOR ENCLOSURE DOORS  |              |          |          |
| SCALE  | UNLESS NOTED | DATE     | NO. 39   |
| 6" = 1'-0"   |              |          |          |



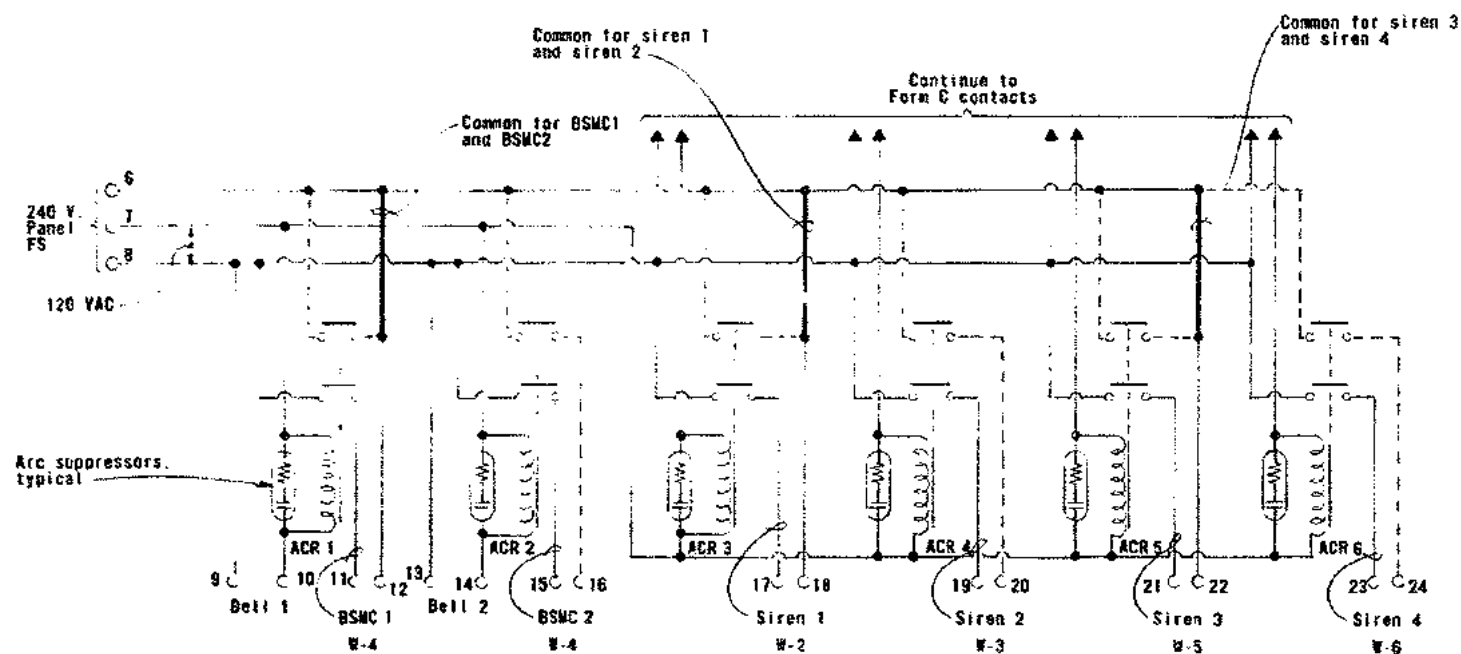


# NOTES

1. Dashed lines indicate disconnect, remove only as directed by the Engineer; heavy lines indicate new.



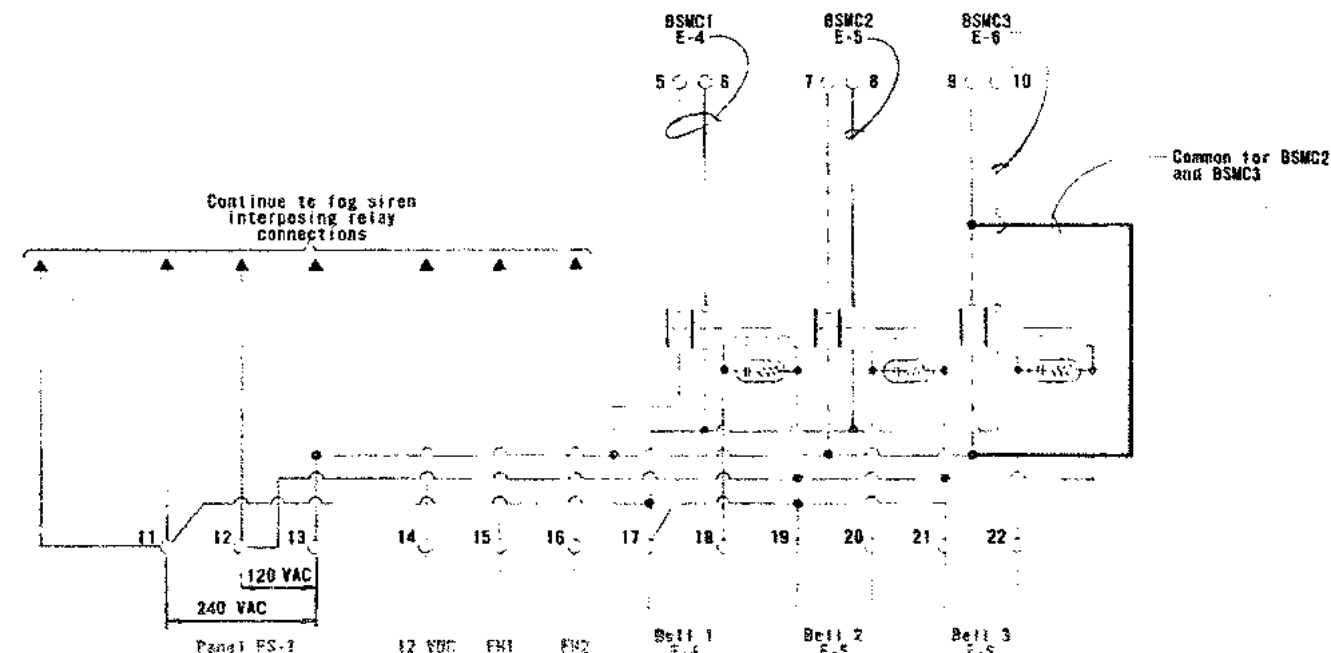
|  |                       |                            |   |
|--|-----------------------|----------------------------|---|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                       |                            |   |
| DESIGN   | BY <i>[Signature]</i> | CHECKED <i>[Signature]</i> | APPROVED _____                                  |
| DRAWN  | BY <i>[Signature]</i> | CHECKED <i>[Signature]</i> |   |
| MODIFICATION   | BY <i>[Signature]</i> | ESTIMATE                   |   |
| IN CHARGE OF DESIGN<br><i>[Signature]</i>  |                       |                            |   |
| APPROVAL RECOMMENDED:<br><i>[Signature]</i>  |                       |                            | DESIGN ENGINEER — REGISTERED ENGR.              |
| DESIGN ENGINEER — REGISTERED ENGR.   |                       |                            | ASSISTANT DEPUTY CHIEF — REGISTERED ENGR. CIVIL |
| SAN FRANCISCO-OAKLAND BAY BRIDGE<br>ELECTRICAL ALTERATIONS   |                       |                            | SCALE <i>NONE</i>                               |
| EAST BAY FOG HORN RECONNECTIONS  |                       |                            | SHEET NO. <i>1</i>                              |
|  |                       |                            | DRAWING NO. <i>F 44122-1</i>                    |



#### PARTIAL SCHEMATIC - WEST BAY

##### RELAY INTERPOSE CONTROL

(See Automatic Power Inc., shop drawing #W-1802-C)



#### PARTIAL SCHEMATIC - EAST BAY

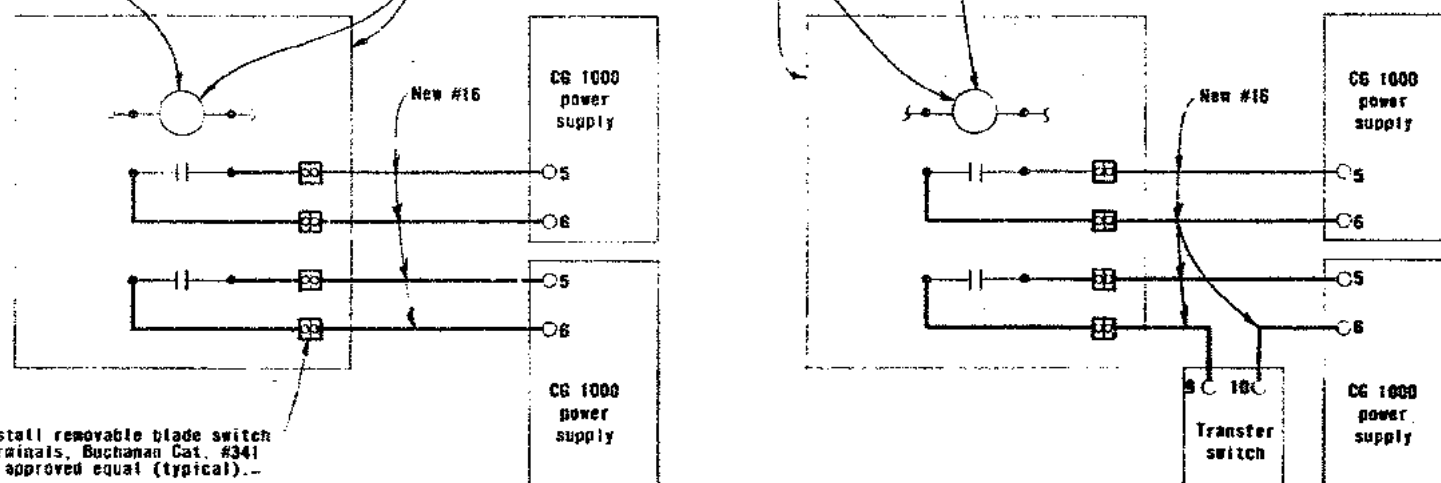
##### RELAY INTERPOSE CONTROL

(See Automatic Power Inc., shop drawing #W-1803-C)

Relay 98 designated as spare on G.E. shop drawing #20187184, sheet 6

Part of combination starter for existing fog sirens and bells, see C44122, sheet 30.

Relay 98 designated as spare on G.E. shop drawing #756880082



#### WEST BAY

(See Automatic Power Inc., shop drawing #X-930-C)

#### EAST BAY

(See Automatic Power Inc., shop drawing #X-929-C)

#### FOG HORN REMOTE CONTROL CONNECTIONS

#### NOTES

1. Dashed lines indicate disconnect and removal; heavy lines indicate new.



|  |                       |                            |                        |
|--|-----------------------|----------------------------|------------------------|
| STATE OF CALIFORNIA — BUSINESS AND TRANSPORTATION AGENCY — DEPARTMENT OF TRANSPORTATION — TOLL BRIDGE ADMINISTRATION |                       |                            |                        |
| DESIGN   | BY <i>[Signature]</i> | CHECKED <i>[Signature]</i> | APPROVED _____         |
| DRAWN  | BY <i>[Signature]</i> | CHECKED <i>[Signature]</i> |                        |
| IN CHARGE OF DESIGN  | <i>[Signature]</i>    |                            |                        |
| APPROVAL RECOMMENDED   | <i>[Signature]</i>    |                            |                        |
| SAN FRANCISCO-OAKLAND BAY BRIDGE   |                       |                            | ELECTRICAL ALTERATIONS |
| FOG HORN RECONNECTIONS   |                       |                            |                        |
| SCALE  | NONE                  | SHEET NO.                  | 2                      |
| DRAWING NO.  |                       |                            | F-44122-2              |